Ohio Environmental Protection Agency

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

4/22/2016

Genevieve Damico *Via E-Mail Notification*
United States Environmental Protection Agency
Mail Code: AR-18J
77 West Jackson Blvd.
Chicago, IL 60604-3507

RE: PROPOSED AIR POLLUTION TITLE V PERMIT
Facility Name: Momentive Performance Materials Quartz, Inc.
Facility ID: 0145000213
Permit Type: Renewal
Permit Number: P0105071

Dear Ms. Damico:

A proposed OAC Chapter 3745-77 Title V permit for the referenced facility has been issued for review by U.S. EPA. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab. If U.S. EPA does not object to this proposed permit, the permit will be processed for issuance as a final action not less than 45 days from the date of this letter. Please contact me at (614) 644-2835 by the end of the 45 day review period if you wish to object to the proposed permit.

Sincerely,

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

Cc: Ohio EPA DAPC, Central District Office

PROPOSED

Division of Air Pollution Control
Title V Permit
for
Momentive Performance Materials Quartz, Inc.

Facility ID:	0145000213
Permit Number:	P0105071
Permit Type:	Renewal
Issued:	4/22/2016
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance

Ohio Environmental Protection Agency

Division of Air Pollution Control
Title V Permit
for
Momentive Performance Materials Quartz, Inc.

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Authorization

Facility ID:	0145000213
Facility Description:	Nonmetallic mineral products
Application Number(s):	A0014044, A0037385, M0000566, A0038348, A0047063
Permit Number:	P0105071
Permit Description:	Title V renewal for nonmetallic mineral products
Permit Type:	Renewal
Issue Date:	4/22/2016
Effective Date:	To be entered upon final issuance
Expiration Date:	To be entered upon final issuance
Superseded Permit Number:	P0083656

This document constitutes issuance of an OAC Chapter 3745-77 Title V permit to:

Momentive Performance Materials Quartz, Inc.
611 O'Neill Drive
Hebron, OH 43025

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

Ohio EPA DAPC, Central District Office
50 West Town Street, 6th Floor
P.O. Box 1049
Columbus, OH 43216-1049
(614)728-3778

The above named entity is hereby granted a Title V permit pursuant to Chapter 3745-77 of the Ohio Administrative Code. This permit and the authorization to operate the air contaminant sources (emissions units) at this facility shall expire at midnight on the expiration date shown above. You will be sent a notice approximately 18 months prior to the expiration date regarding the renewal of this permit. If you do not receive a notice, please contact the Ohio EPA DAPC, Central District Office. If a renewal permit is not issued prior to the expiration date, the permittee may continue to operate pursuant to OAC rule 3745-77-08(E) and in accordance with the terms of this permit beyond the expiration date, if a timely renewal application is submitted. A renewal application will be considered timely if it is submitted no earlier than 18 months and no later than 6 months prior to the expiration date.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Craig W. Butler
Director

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:

(1) Standard Term and Condition A. 24., Reporting Requirements Related to Monitoring and Record Keeping Requirements of State-Only Enforceable Permit Terms and Conditions

(2) Standard Term and Condition A. 25., Records Retention Requirements for State-Only Enforceable Permit Terms and Conditions

(3) Standard Term and Condition A. 27., Scheduled Maintenance/Malfunction Reporting For State-Only Requirements

(4) Standard Term and Condition A. 29., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

(5) Standard Term and Condition A. 30.

(Authority for term: ORC 3704.036(A))

2. Monitoring and Related Record Keeping and Reporting Requirements

a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit (i.e., in section C. Emissions Unit Terms and Conditions of this Title V permit), the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:

(1) The date, place (as defined in the permit), and time of sampling or measurements.

(2) The date(s) analyses were performed.

(3) The company or entity that performed the analyses.

(4) The analytical techniques or methods used.

(5) The results of such analyses.

(6) The operating conditions existing at the time of sampling or measurement.

(Authority for term: OAC rule 3745-77-07(A)(3)(b)(i))

b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include all calibration and maintenance records and all original strip-chart recordingsfor continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

(Authority for term: OAC rule 3745-77-07(A)(3)(b)(ii))

c) The permittee shall submit required reports in the following manner:

(1) All reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations caused by malfunctions shall be submitted in the following manner:

Any malfunction, as defined in OAC rule 3745-15-06(B)(1), shall be promptly reported to the Ohio EPA in accordance with OAC rule 3745-15-06. In addition, to fulfill the OAC rule 3745-77-07(A)(3)(c) deviation reporting requirements for malfunctions, written reports that identify each malfunction that occurred during each calendar quarter (including each malfunction reported only verbally in accordance with OAC rule 3745-15-06) shall be submitted by January 31, April 30, July 31, and October 31 of each year in accordance with Standard Term and Condition A.2.c)(2) below; and each report shall cover the previous calendar quarter. An exceedance of the visible emission limitations specified in OAC rule 3745-17-07(A)(1) that is caused by a malfunction is not a violation and does not need to be reported as a deviation if the owner or operator of the affected air contaminant source or air pollution control equipment complies with the requirements of OAC rule 3745-17-07(A)(3)(c).

In accordance with OAC rule 3745-15-06, a malfunction reportable under OAC rule 3745-15-06(B) is a deviation of the federally enforceable permit requirements. Even though verbal notifications and written reports are required for malfunctions pursuant to OAC rule 3745-15-06, the written reports required pursuant to this term must be submitted quarterly to satisfy the prompt reporting provision of OAC rule 3745-77-07(A)(3)(c).

In identifying each deviation caused by a malfunction, the permittee shall specify the emission limitation(s) (or control requirement(s)) for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. For a specific malfunction, if this information has been provided in a written report that was submitted in accordance with OAC rule 3745-15-06, the permittee may simply reference that written report to identify the deviation. Nevertheless, all malfunctions, including those reported only verbally in accordance with OAC rule 3745-15-06, must be reported in writing on a quarterly basis.

Any submittedscheduled maintenancerequests, as referenced in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described above for malfunctions.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

(2) Except as may otherwise be provided in the terms and conditions for a specific emissions unit (i.e., in section C. Emissions Unit Terms and Conditions of this Title V permit or, in some cases, in section B. Facility-Wide Terms and Conditions of this Title V permit), all reporting required in accordance with OAC rule 3745-77-07(A)(3)(c) for deviations of the emission limitations, operational restrictions, and control device operating parameter limitations shall be submitted in the following manner:

Written reports of (a) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, (b) the

probable cause of such deviations, and (c) any corrective actions or preventive measures taken, shall be submitted promptly to the Ohio EPA DAPC, Central District Office. Except as provided below, the written reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

In identifying each deviation, the permittee shall specify the emission limitation(s), operational restriction(s), and/or control device operating parameter limitation(s) for which the deviation occurred, describe each deviation, and provide the estimated magnitude and duration of each deviation.

These written deviation reports shall satisfy the requirements of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations. Full compliance with OAC rule 3745-77-07(A)(3)(c) requires reporting of all other deviations of the federally enforceable requirements specified in the permit as required by such rule.

If an emissions unit has a deviation reporting requirement for a specific emission limitation, operational restriction, or control device operating parameter limitation that is not on a quarterly basis (e.g., within 30 days following the end of the calendar month, or within 30 or 45 days after the exceedance occurs), that deviation reporting requirement satisfies the reporting requirements specified in this Standard Term and Condition for that specific emission limitation, operational restriction, or control device parameter limitation. Following the provisions of that non-quarterly deviation reporting requirement will also satisfy (for the deviations so reported) the requirements of OAC rule 3745-77-07(A)(3)(c) pertaining to the submission of monitoring reports every six months and to the prompt reporting of all deviations, and additional quarterly deviation reports for that specific emission limitation, operational restriction, or control device parameter limitation are not required pursuant to this Standard Term and Condition.

See A.29 below if no deviations occurred during the quarter.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

(3) All reporting required in accordance with the OAC rule 3745-77-07(A)(3)(c) for other deviations of the federally enforceable permit requirements which are not reported in accordance with Standard Term and Condition A.2)c)(2) above shall be submitted in the following manner:

Unless otherwise specified by rule, written reports that identify deviations of the following federally enforceable requirements contained in this permit; Standard Terms and Conditions: A.3, A.4, A.5, A.7.e), A.8, A.13, A.15, A.19, A.20, A.21, and A.23 of this Title V permit, as well as any deviations from the requirements in section C. Emissions Unit Terms and Conditions of this Title V permit, and any monitoring, record keeping, and reporting requirements, which are not reported in accordance with Standard Term and Condition A.2.c)(2) above shall be submitted to the Ohio EPA DAPC, Central District Office by January 31 and July 31 of each year; and each report shall cover the previous six calendar months. Unless otherwise specified by rule, all other deviations from federally enforceable requirements identified in this permit shall be submitted annually as part of the annual compliance certification, including deviations of federally

enforceable requirements not specifically addressed by permit or rule for the insignificant activities or emissions levels (IEU) identified in section B. Facility-Wide Terms and Conditions of this Title V permit. Annual reporting of deviations is deemed adequate to meet the deviation reporting requirements for IEUs unless otherwise specified by permit or rule.

In identifying each deviation, the permittee shall specify the federally enforceable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation.

These semi-annual and annual written reports shall satisfy the reporting requirements of OAC rule 3745-77-07(A)(3)(c) for any deviations from the federally enforceable requirements contained in this permit that are not reported in accordance with Standard Term and Condition A.2.c)(2) above.

If no such deviations occurred during a six-month period, the permittee shall submit a semi-annual report which states that no such deviations occurred during that period.

(Authority for term: OAC rules 3745-77-07(A)(3)(c)(i) and (ii) and OAC rule 3745-77-07(A)(13)(b))

(4) Each written report shall be signed by a Responsible Official certifying that, "based on information and belief formed after reasonable inquiry, the statements and information in the report (including any written malfunction reports required by OAC rule 3745-15-06 that are referenced in the deviation reports) are true, accurate, and complete." Signature by the Responsible Official may be represented by entry of the personal identification number (PIN) by the Responsible Official as part of the electronic submission process or by the scanned attestation document signed by the Responsible Official that is attached to the electronically submitted written report.

(Authority for term: OAC rule 3745-77-07(A)(3)(c)(iv))

(5) Consistent with A.2.c.1. above, reports of any required monitoring and/or record keeping information required to be submitted to Ohio EPA shall be submitted to Ohio EPA DAPC, Central District Office unless otherwise specified.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

3. Reporting of Any Exceedence of a Federally Enforceable Emission Limitation or Control Requirement Resulting From Scheduled Maintenance

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. Except as provided in OAC rule 3745-15-06(A)(3), any scheduled maintenance necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s). Any scheduled maintenance, as defined in OAC rule 3745-15-06(A)(1), that results in a deviation from a federally enforceable emission limitation (or control requirement) shall be reported in the same manner as described for malfunctions in Standard Term and Condition A.2.c)(1) above.

(Authority for term: OAC rule 3745-77-07(A)(3)(c))

4. Risk Management Plans

If applicable, the permittee shall develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq. ("Act"); and, pursuant to 40 C.F.R. 68.215(a), the permittee shall submit either of the following:

a) a compliance plan for meeting the requirements of 40 C.F.R. Part 68 by the date specified in 40 C.F.R. 68.10(a) and OAC 3745-104-05(A); or

b) as part of the compliance certification submitted under 40 C.F.R. 70.6(c)(5), a certification statement that the source is in compliance with all requirements of 40 C.F.R. Part 68 and OAC Chapter 3745-104, including the registration and submission of the risk management plan.

(Authority for term: OAC rule 3745-77-07(A)(4))

5. Title IV Provisions

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

(Authority for term: OAC rule 3745-77-07(A)(5))

6. Severability Clause

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

(Authority for term: OAC rule 3745-77-07(A)(6))

7. General Requirements

a) Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and reissuance, or modification, or for denial of a permit renewal application.

b) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the federally enforceable terms and conditions of this permitexcept as provided pursuant to A.16 below.

c) This permit may be modified, reopened, revoked, or revoked and reissued, for cause, in accordance with A.11 below. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.

d) This permit does not convey any property rights of any sort, or any exclusive privilege.

e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

f) Except as otherwise indicated below, this Title V permit, or permit modification, is effective for five years from the original effective date specified in the permit. In the event that this facility becomes eligible for non-title V permits, this permit shall cease to be enforceable when:

(1) the permittee submits an approved facility-wide potential to emit analysis supporting a claim that the facility no longer meets the definition of a "major source" as defined in OAC rule 3745-77-01(W) based on the permanent shutdown and removal of one or more emissions units identified in this permit; or

(2) the permittee no longer meets the definition of a "major source" as defined in OAC rule 3745-77-01(W) based on obtaining restrictions on the facility-wide potential(s) to emit that are federally enforceable or legally and practically enforceable ; or

(3) a combination of (1) and (2) above.

The permittee shall continue to comply with all applicable OAC Chapter 3745-31 requirements for all regulated air contaminant sources once this permit ceases to be enforceable. The permittee shall comply with any residual requirements, such as quarterly deviation reports, semi-annual deviation reports, and annual compliance certifications covering the period during which this Title V permit was enforceable. All records relating to this permit must be maintained in accordance with law.

(Authority for term: OAC rule 3745-77-01(W), OAC rule 3745-77-07(A)(3)(b)(ii), OAC rule 3745-77(A)(7))

8. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78.

(Authority for term: OAC rule 3745-77-07(A)(8))

9. Marketable Permit Programs

No revision of this permit is required under any approved economic incentive, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for in this permit.

(Authority for term: OAC rule 3745-77-07(A)(9))

10. Reasonably Anticipated Operating Scenarios

The permittee is hereby authorized to make changes among operating scenarios authorized in this permit without notice to the Ohio EPA, but, contemporaneous with making a change from one operating scenario to another, the permittee must record in a log at the permitted facility the scenario under which the permittee is operating. The permit shield provided in these standard terms and conditions shall apply to all operating scenarios authorized in this permit.

(Authority for term: OAC rule 3745-77-07(A)(10))

11. Reopening for Cause

This Title V permit will be reopened prior to its expiration date under the following conditions:

a) Additional applicable requirements under the Act become applicable to one or more emissions units covered by this permit, and this permit has a remaining term of three or more years. Such a reopening shall be completed not later than eighteen (18) months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to paragraph (E)(1) of OAC rule 3745-77-08.

b) This permit is issued to an affected source under the acid rain program and additional requirements (including excess emissions requirements) become applicable. Upon approval by the Administrator, excess emissions offset plans shall be deemed to be incorporated into the permit, and shall not require a reopening of this permit.

c) The Director of the Ohio EPA or the Administrator of the U.S. EPA determines that the federally applicable requirements in this permit are based on a material mistake, or that inaccurate statements were made in establishing the emissions standards or other terms and conditions of this permit related to such federally applicable requirements.

d) The Administrator of the U.S. EPA or the Director of the Ohio EPA determines that this permit must be revised or revoked to assure compliance with the applicable requirements.

(Authority for term: OAC rules 3745-77-07(A)(12) and 3745-77-08(D))

12. Federal and State Enforceability

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

(Authority for term: OAC rule 3745-77-07(B))

13. Compliance Requirements

a) Any document (including reports) required to be submitted and required by a federally applicable requirement in this Title V permit shall include a certification by a Responsible

Officialthat, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

b) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:

(1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with paragraph (E) of OAC rule 3745-77-03.

(3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.

(4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.

c) The permittee shall submit progress reports to the Ohio EPA DAPC, Central District Office concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:

(1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.

(2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

d) Compliance certifications concerning the terms and conditions contained in this permit that are federally enforceable emission limitations, standards, or work practices, shall be submitted to the Director (the Ohio EPA DAPC, Central District Office) and the Administrator of the U.S. EPA in the following manner and with the following content:

(1) Compliance certifications shall be submitted annually on a calendar year basis. The annual certification shall be submitted on or before April 30th of each year during the permit term.

(2) Compliance certifications shall include the following:

a. Identification of each term or condition that is the basis of the certification. The identification may include a statement by the Responsible Official that every term and condition that is federally enforceable has been reviewed, and such terms and conditions with which there has been continuous compliance throughout the year are not separately identified.

b. The permittee's current compliance status.

c. Whether compliance was continuous or intermittentconsistent with A.13.d.2.a above.

d. The method(s) used for determining the compliance status of the source currently and over the required reporting period consistent with A.13.d.2.a above.

e. Such other facts as the Director of the Ohio EPA may require in the permit to determine the compliance status of the source.

(3) Compliance certifications shall contain such additional requirements as may be specified pursuant to sections 114(a)(3) and 504(b) of the Act.

(Authority for term: OAC rules 3745-77-07(C)(1),(2),(4) and (5) and ORC section 3704.03(L))

14. Permit Shield

a) Compliance with the terms and conditions of this permit (including terms and conditions established for alternate operating scenarios, emissions trading, and emissions averaging, but excluding terms and conditions for which the permit shield is expressly prohibited under OAC rule 3745-77-07) shall be deemed compliance with the applicable requirements identified and addressed in this permit as of the date of permit issuance.

b) This permit shield provision shall apply to any requirement identified in this permit pursuant to OAC rule 3745-77-07(F)(2), as a requirement that does not apply to the source or to one or more emissions units within the source.

(Authority for term: OAC rule 3745-77-07(F))

15. Operational Flexibility

The permittee is authorized to make the changes identified in OAC rule 3745-77-07(H)(1)(a) to (H)(1)(c) within the permitted stationary source without obtaining a permit revision, if such change is not a modification under any provision of Title I of the Act [as defined in OAC rule 3745-77-01(JJ)], and does not result in an exceedance of the emissions allowed under this permit (whether expressed therein as a rate of emissions or in terms of total emissions), and the permittee provides the Administrator of the U.S. EPA and the Ohio EPA DAPC, Central District Office with written notification within a minimum of seven days in advance of the proposed changes, unless the change is associated with, or in response to, emergency conditions. If less than seven days notice is provided because of a need to respond more quickly to such emergency conditions, the permittee shall provide notice to the Administrator of the U.S. EPA and the Ohio EPA DAPC, Central District Office as soon as possible after learning of the need to make the change. The notification shall contain the items required under OAC rule 3745-77-07(H)(2)(d).

(Authority for term: OAC rules 3745-77-07(H)(1) and (2))

16. Emergencies

The permittee shall have an affirmative defense of emergency to an action brought for noncompliance with technology-based emission limitations if the conditions of OAC rule 3745-77-07(G)(3) are met. This emergency defense provision is in addition to any emergency or upset provision contained in any applicable requirement.

(Authority for term: OAC rule 3745-77-07(G))

17. Off-Permit Changes

The owner or operator of a Title V source may make any change in its operations or emissions at the source that is not specifically addressed or prohibited in the Title V permit, without obtaining an amendment or modification of the permit, provided that the following conditions are met:

a) The change does not result in conditions that violate any applicable requirements or that violate any existing federally enforceable permit term or condition.

b) The permittee provides contemporaneous written notice of the change to the Director and the Administrator of the U.S. EPA, except that no such notice shall be required for changes that qualify as insignificant emissions levels or activities as defined in OAC rule 3745-77-01(U). Such written notice shall describe each such change, the date of such change, any change in emissions or pollutants emitted, and any federally applicable requirement that would apply as a result of the change.

c) The change shall not qualify for the permit shield under OAC rule 3745-77-07(F).

d) The permittee shall keep a record describing all changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes.

e) The change is not subject to any applicable requirement under Title IV of the Act or is not a modification under any provision of Title I of the Act.

Paragraph (I) of rule 3745-77-07 of the Administrative Code applies only to modification or amendment of the permittee's Title V permit. The change made may require a permit-to-install under Chapter 3745-31 of the Administrative Code if the change constitutes a modification as defined in that Chapter. Nothing in paragraph (I) of rule 3745-77-07 of the Administrative Code shall affect any applicable obligation under Chapter 3745-31 of the Administrative Code.

(Authority for term: OAC rule 3745-77-07(I))

18. Compliance Method Requirements

Nothing in this permit shall alter or affect the ability of any person to establish compliance with, or a violation of, any applicable requirement through the use of credible evidence to the extent authorized by law. Nothing in this permit shall be construed to waive any defenses otherwise available to the permittee, including but not limited to, any challenge to the Credible Evidence Rule (see 62 Federal Register 8314, Feb. 24, 1997), in the context of any future proceeding.

(This term is provided for informational purposes only.)

19. Insignificant Activities or Emissions Levels

Each IEU that is subject to one or more applicable requirements shall comply with those applicable requirements.

(Authority for term: OAC rule 3745-77-07(A)(1))

20. Permit to Install Requirement

Prior to the "installation" or "modification" of any "air contaminant source," as those terms are defined in OAC rule 3745-31-01, a permit to install must be obtained from the Ohio EPA pursuant to OAC Chapter 3745-31.

(Authority for term: OAC rule 3745-77-07(A)(1))

21. Air Pollution Nuisance

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

(Authority for term: OAC rule 3745-77-07(A)(1))

22. Permanent Shutdown of an Emissions Unit

The permittee may notify Ohio EPA of any emissions unit that is permanently shut down by submitting a certification from the Responsible Official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the Responsible Official that the emissions unit was permanently shut down.

After the date on which an emissions unit is permanently shut down (i.e., that 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 and therefore ceases to meet the definition of an "emissions unit" as defined in OAC rule 3745-77-01(O)), rendering existing permit terms and conditions irrelevant, the permittee shall not be required, after the date of the certification and submission to Ohio EPA, to meet any Title V permit requirements applicable to that emissions unit, except for any residual requirements, such as the quarterly deviation reports, semi-annual deviation reports and annual compliance certification covering the period during which the emissions unit last operated. All records relating to the shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law.

Unless otherwise exempted, noemissions unit identified in this permit that has beencertified by the Responsible Official as being permanently shut down may resume operation without first applying for and obtaining a permit to install pursuant to OAC Chapter 3745-31.

(Authority for term: OAC rule 3745-77-01)

23. Title VI Provisions

If applicable, the permittee shall comply with the standards for recycling and reducing emissions of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

a) Persons operating appliances for maintenance, service, repair, or disposal must comply with the required practices specified in 40 CFR 82.156.

b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment specified in 40 CFR 82.158.

c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

(Authority for term: OAC rule 3745-77-01(H)(11)))

24. Reporting Requirements Related to Monitoring and Record Keeping RequirementsUnder State Law Only

The permittee shall submit required reports in the following manner:

a) Reports of any required monitoring and/or record keeping information shall be submitted to theOhio EPA DAPC, Central District Office.

b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (i) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and record keeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA DAPC, Central District Office. In identifying each deviation, the permittee shall specify the applicable requirement for which the deviation occurred, describe each deviation, and provide the magnitude and duration of each deviation. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

25. Records Retention RequirementsUnder State Law Only

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

26. Inspections and Information Requests

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

whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

(Authority for term: OAC rule 3745-77-07(C))

27. Scheduled Maintenance/Malfunction Reporting For State-Only Requirements

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the Ohio EPA DAPC, Central District Office in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

28. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The Ohio EPA DAPC, Central District Office must be notified in writing of any transfer of this permit.

(Authority for term: OAC rule 3745-77-01(C))

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

If no emission limitation (or control requirement), operational restriction and/or control device parameter limitation deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

The permittee is not required to submit a quarterly report which states that no deviations occurred during that quarter for the following situations:

a) where an emissions unit has deviation reporting requirements for a specific emission limitation, operational restriction, or control device parameter limitation that override the deviation reporting requirements specified in Standard Term and Condition A.2.c)(2); or

b) where an uncontrolled emissions unit has no monitoring, record keeping, or reporting requirements and the emissions unit's applicable emission limitations are established at the potential to emit; or

c) where the company's Responsible Official has certified that an emissions unit has been permanently shut down.

30. Submitting Documents Required by this Permit

All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event ofan alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications, or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the Ohio EPA DAPC, Central District Office, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the required application, notification or report is considered to be "submitted" on the date the submission is successful using a valid electronic signature. Signature by the Responsible Official may be represented as provided through procedures established in Air Services.

B. Facility-Wide Terms and Conditions

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:

   a) 2.a)(3), 4.f)-4.i.),5.e), 6.a)(3) and (4), and 6.b)

2. Applicable Emissions Limitations and/or Control Requirements

   b) Emission Limitations

      (1) Pursuant to OAC rule 3745-31-05(D), total nitrogen oxides (NOx) emissions shall not exceed 249.7 tons per year for emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032, and P035, combined, as a rolling, 12-month summation of the NOx emissions.

      (2) Pursuant to OAC rule 3745-17-07(A), visible particulate emissions (PE) from any stack serving emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, P010, P011, P012, P014, P015, P021, P032,and P035 shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

      (3) Pursuant to ORC 3704.03(F)(4)(c), ammonia emissions from the SCR unit stack shall not exceed 93.4 pounds per hour and 409.1 tons per year.

      Ammonia is an air toxic, and the hourly emission limitation was established to reflect the status quo ammonia emission rate for this emissions unit for future air toxics evaluations that may involve this emissions unit.

   c) Additional Terms and Conditions

      (1) The permittee shall control particulate emissions (PE) from the blockhouse enclosures of emissions units P010, P011, P012 and P035 by using an electrostatic precipitator (ESP).

      [OAC rule 3745-77-07(A)(1)]

      (2) A continuous emissions monitoring system (CEMS) malfunction is defined as any time in which a CEMS systems used for monitoring emissions is not able to sample or analyze the nitrogen oxides in the gas stream. In the event of a CEMS malfunction, NOx emissions during the malfunction may be determined utilizing source specific emission factors or calculations as set forth in section B.4.d).

      [OAC rule 3745-77-07(A)(3)]

      (3) A SCR malfunction is defined as any time that the SCR automatically shuts down due to an internal control system setting or when the permittee manually determines that the SCR is not operating properly and must be shut down. The malfunction event will begin at the time of automatic shutdown of the SCR (as recorded by the SCR control system) or at the time a malfunction requiring SCR shutdown is manually identified by the permittee. In the event of a SCR malfunction, NOx emissions during the malfunction

may be determined utilizing source specific emission factors or calculations as set forth in Section B.4.d).

[OAC rule 3745-77-07(B)(1)]

(4) An ESP malfunction is defined as any time that the ESP automatically shuts down due to an internal control system setting, or when the permittee manually determines that the ESP is not operating properly and must be shut down. The malfunction event will begin at the time of automatic shutdown of the ESP as recorded by the control system, or at the time a malfunction requiring ESP shutdown is manually identified by the permitee.

[OAC rule 3745-77-07(B)(1)]

(5) CEMS Quality Assurance/ Quality Control

a) The permittee shall maintain a copy of the written quality assurance/quality control plan for the NOx CEMS used to demonstrate compliance with paragraph B.2.a)(1) to ensure continuous valid and representative readings of NOx emissions in units of pounds per hour and tons per month. The plan shall follow the requirements of 40 CFR Part 60, Appendix F. The quality assurance/quality control plan and a logbook dedicated to the CEMS must be kept on site and available for inspection during regular office hours.

b)

c) [OAC rule 3745-77-07(A)(3)]

(6) CEMS Statement of Certification

The permittee shall maintain a copy of the certification of the continuous NOx monitoring systems granted by the Ohio EPA, Central Office. This certification is granted upon determination by the Ohio EPA, Central Office that the system meets all requirements of ORC section 3704.03(I) and 40 CFR Part 60, Appendix B, Performance Specification 2.

d) [OAC rule 3745-77-07(A)(3)]

(7) In the event of an ESP malfunction, emissions units P010, P011, P012, and P035 will be shut down immediately following completion of work-in-process. Work-in-process is defined as the crucible being fused in the blockhouse at the time of the malfunction. In the event of an ESP malfunction, PM emissions during the malfunction may be determined utilizing source specific fusion emission factors as set forth in this permit.

e) [OAC rule 3745-77-07(B)(1)]

3. Operational Restrictions

   a) None

4. Monitoring and Record Keeping Requirements

   a) The permittee shall maintain monthly records of the tons of NOx emissions per month and the rolling, 12-month NOx emissions calculated as the summation of the NOx emissions as determined by the CEMS (Section B.4.c) and from the recordkeeping in B.4.d).

      [OAC rule 3745-77-07(C)(1)]

   b) The permittee shall operate and maintain the CEMS to continuously monitor and record combined NOx emissions from the SCR stack. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

      [OAC rule 3745-77-07(C)(1), 40 CFR Part 60.13]

   c) The permittee shall maintain records of all data obtained by a CEMS used to demonstrate compliance with this permit, including emissions of NOx in units of pounds per hour and tons per month, results of daily zero/span calibration checks and magnitude of manual calibration adjustments.

      [OAC rule 3745-77-07(C)(1), 40 CFR Part 60.13]

   e) For each CEMS malfunction or any period where emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035 are vented through a stack not monitored by a CEMS the permittee shall collect and record the following information:

      (1) The emissions unit ID for each above mentioned emission unit operating during the malfunction or the emissions unit ID for each emissions unit not vented to a stack monitored by a CEMS.

      (2) For periods of CEMS malfunction: The total duration of the CEMS malfunction, in hours or the volume of natural gas consumed by each emissions unit during the malfunction in, standard cubic feet.

      (3) For periods when the above mentioned emissions units are not vented to a stack monitored by a CEMS: The total hours of operation in which the emissions unit was not vented to a stack monitored by a CEMS or the volume of natural gas consumed while the emissions unit was not vented to a stack monitored by a CEMS, in standard cubic feet.

      (4) The NOx emissions from the lathes in operation calculated by:

         a. multiplying the lathes in operation in Section B.4.d)(1), by the total hours of the CEMS malfunctions in Section B.4.d)(2) or the total hours of operation in Section B.4.d)(3), by the maximum uncontrolled emission rate for each lathe (X) or;

b. by multiplying the volume of natural gas consumed by each lathe, by the established heating value of the natural gas (Z), by the established NOx emission factor (Y), derived from emissions tests performed on March 25, 1998, or emission factors based on more recent source-specific emission tests approved in writing by the Ohio EPA, where:

Source	(X) Uncontrolled NOx lb/hr	(Y) Emission Factor NOx lb/MMBtu	(Z) Natural Gas Heating Value MMBtu/scf
B001	45.6	12.06	1.05×10^{-3}
B002	45.6	12.06	1.05×10^{-3}
B003	45.6	12.06	1.05×10^{-3}
B006	45.6	12.06	1.05×10^{-3}
B023	39.2	7.77	1.05×10^{-3}
B024	39.2	7.77	1.05×10^{-3}
B025	39.2	7.77	1.05×10^{-3}
B026	39.2	7.77	1.05×10^{-3}
B027	39.2	7.77	1.05×10^{-3}
B028	39.2	7.77	1.05×10^{-3}
B029	39.2	7.77	1.05×10^{-3}
B030	49.0	7.77	1.05×10^{-3}
B031	39.2	7.77	1.05×10^{-3}
B032	39.2	7.77	1.05×10^{-3}
B033	39.2	7.77	1.05×10^{-3}
B034	88.5	11.7	1.05×10^{-3}
B035	88.5	11.7	1.05×10^{-3}
B036	88.5	11.7	1.05×10^{-3}
B037	88.5	11.7	1.05×10^{-3}
P014	55.0	12.06	1.05×10^{-3}
P015	55.0	12.06	1.05×10^{-3}
P021	6.6	8.51	3.25×10^{-4}
P032	39.2	7.77	1.05×10^{-3}

(5) The NOx emissions from the arc fusion machines* calculated using the following equation:

{arc fusion machine #4 (P010) hours of operation * 29.78 lbs/hr } + {arc fusion machine #5 (P011) hours of operation * 23.9lbs/hr } + {arc fusion machine #8 (P012) hours of operation * 44.49 lbs/hr } + {arc fusion machine #9 (P035) hours of operation * 44.49 lbs/hr}.

* If an arc fusion machine is not in operation then its emissions are assumed to be zero.

(6) The NOx emissions from the trial burners and rod straightener using the following equation:

{(total hours the rod straightener (B038) was operated * 8.5 lbs/hr) + (total hours the trial burners were operated * 13.3 lbs/hr)}

(7) The summation of the NOx emissions from the lathes, arc fusion machines, trial burners and rod straightener in pounds.

[OAC rule 3745-77-07(C)(1), 40 CFR Part 60.13]

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

(1) the color of the emissions;
(2) whether the emissions are representative of normal conditions;
(3) if the emissions are not representative of normal conditions, the cause(s) of the abnormal emissions;
(4) the total duration of any visible emission incident; and
(5) any corrective actions taken to eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (4) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions 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.

If the checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when any of the emissions units identified in Section B.2.a)(2) are in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to once each operating day until such time as there are 30 consecutive operating days of normal visible emissions.

[OAC rule 3745-77-07(C)(1)]

f) The PTI applications for this/these emissions unit(s), B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035, were evaluated based on the actual materials and the design parameters of the emissions unit's(s') exhaust system, as specified by the permittee. The Toxic Air Contaminant Statute, ORC 3704.03(F), was applied to this/these emissions unit(s) for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant(s) emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

(1) the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):

a. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; or

b. STEL (short term exposure limit) or the ceiling value from the ACGIH "Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices"; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.

c. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

d. This standard is/was then adjusted to account for the duration of the exposure or the operating hours of the emissions unit(s), i.e., "**X**" hours per day and "**Y**" days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/X \times 5/Y = 4\ TLV/XY = MAGLC$$

e. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or "worst case" toxic contaminant(s):

Toxic Contaminant: ammonia

TLV (mg/m3): 17

Maximum Hourly Emission Rate (lbs/hr): 93.4

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 171.09

MAGLC (ug/m3): 404.8

The permittee, has demonstrated that emissions of ammonia, from the SCR unit stack is calculated to be less than eighty per cent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

[ORC 3704.03(F)(3)(c) and F(4)]

g) Prior to making any physical changes to or changes in the method of operation of the emissions unit(s), that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

(1) changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;

a. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and

b. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Toxic Air Contaminant Statute" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[ORC 3704.03(F)(3)(c) and F(4)], [OAC rule 3745-114-01], Option A, Engineering Guide #70

h) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F):

(1) a description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);

(2) the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the Toxic Air Contaminant Statute, ORC 3704.03(F);

(3) a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the "Toxic Air Contaminant Statute", ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and

a. the documentation of the initial evaluation of compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

i) The permittee shall maintain a record of any change made to a parameter or value used in the dispersion model, used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.

[ORC 3704.03(F)(3)(c) and F(4)]

5. Reporting Requirements

a) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month NOx emission limitation for emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035 combined.

The quarterly deviation reports shall be submitted in accordance with the requirements specified in Part A.2.c).

[OAC rule 3745-77-07(C)(1)]

b) CEMS Data Reporting

The permittee must submit data for each CEMS (that meets the requirements of 40 CFR Part 60.13 and has received certification from Ohio EPA) to Ohio EPA, Central Office on a quarterly basis. The data presented in the quarterly reports shall reflect emissions unit operations, monitoring availability, actual tons of NOx, and rolling, 12-month limitation (in tons) for the previous calendar quarter.

The permittee shall submit reports within one month following the end of each calendar quarter to the Ohio EPA, CDO documenting any CEMS malfunction while the emissions unit was on line (date, time, duration and reason) along with any corrective action(s) taken. The permittee shall provide the emissions unit operating time during the reporting period and the date, time, reason and corrective action(s) taken for each time period of emissions unit and control equipment malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the date, time, reason, and corrective action(s) taken for each time period of monitoring system malfunctions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line also shall be included in the quarterly report. These quarterly excess emission reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall address the data obtained during the previous calendar quarter.

[OAC rule 3745-77-07(C)(1), 40 CFR Part 60.13]

c) CEMS Electronic Data Reporting, Summary Form

Pursuant to OAC rule 3745-15-04 and ORC sections 3704.03(I) and 3704.031, the permittee shall submit a summary of the excess emission report pursuant to 40 CFR Part 60.7. The summary shall be submitted to the Ohio EPA, CDO within the schedule required in Part A.2.c).

[OAC rule 3745-77-07(C)(1) 40 CFR Part 60.7]

d) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack(s) serving the emissions units identified in Section B.2.a)(2) and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, CDO by January 31 and July 31 of each year and shall cover the previous 6-month period.

[OAC rule 3745-77-07(C)(1)]

e) The permittee shall include any changes made to a parameter or value used in the dispersion model, that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration, in the quarterly deviation (excursion) reports. If no changes to the emissions, emissions unit(s), or the exhaust stack have been made, then the report shall include a statement to this effect.

[ORC 3704.03(F)(3)(c) and F(4)]

6. Testing Requirements

a) Compliance with the emission limitations in Section 2.a) of these terms and conditions shall be determined in accordance with the following methods:

(1) Emission Limitation:

249.7 tons per year NOx emissions for emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035 combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

Compliance shall be based on the record keeping in Section 4, Monitoring and Recordkeeping, terms a) through d).

[OAC rule 3745-77-07(C)(1)]

(2) Emission Limitation:

Visible particulate emissions (PE) from the stack(s) serving emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, P010, P011, P012, P014, P015, P021, P032,and P035 shall not exceed 20% opacity, as a 6-minute average, except as provided by OAC rule 3745-17-07.

Applicable Compliance Method:

Compliance shall be based on the record keeping in Section 4., Monitoring and Recordkeeping, term e).

If required by Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

[OAC rule 3745-77-07(C)(1), OAC rule 3745-17-03(B)(1)]

(3) Emission Limitation:

Ammonia emissions from the SCR unit stack shall not exceed 93.4 pounds per hour.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the emission testing requirements specified in term b) which follows.

[OAC rule 3745-77-07(C)(1)]

(4) Emission Limitation:

Ammonia emissions from the SCR unit stack shall not exceed 409.1 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for ammonia shall be assumed provided compliance is maintained with the pound per hour emission limitation for ammonia. The annual limitation was calculated by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

[OAC rule 3745-77-07(C)(1)]

b) The permittee shall conduct, or have conducted, emission testing for the SCR unit in accordance with the following requirements:

(1) The emission testing shall be conducted approximately 2.5 years after the effective date of this permit and approximately 12 months prior to permit expiration.

(2) The emission testing shall be conducted to demonstrate compliance with the hourly emission limitation for ammonia.

(3) The following test methods shall be employed to demonstrate compliance with the ammonia emission limitation: 40 CFR Part 60, Appendix A, Methods 1 - 4 and Conditional Test Method 027. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA, CDO.

(4) The tests shall be conducted while all emissions units venting to the SCR unit are operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA, CDO.

Not later than 30 days prior to the proposed test dates, the permittee shall submit an "Intent to Test" notification to the Ohio EPA, CDO. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the times and dates of the tests, and the persons who will be conducting the tests. Failure to submit such notification for review and approval prior to the tests may result in the Ohio EPA, CDO's refusal to accept the emissions tests.

Personnel from the Ohio EPA, CDO shall be permitted to witness the tests, 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.

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

[OAC rule 3745-77-07(C)(1)]

b) Relative Accuracy Test Audit

To ensure the validity of the data from a CEMS used to demonstrate compliance with this permit, the permittee shall certify the accuracy of the CEMS every two years and as required for good cause pursuant to provisions for a relative accuracy test audit (RATA) in 40 CFR Part 60, Appendix F.

[OAC rule 3745-77-07(C)(1)]

7. Miscellaneous Requirements

a) The following insignificant emissions units at this facility must comply with all applicable State and federal regulations, as well as any emission limitations and/or control requirements contained within the identified permit to install for the emissions unit. The insignificant emissions units listed below are subject to one or more applicable requirements contained in a permit to install or in the SIP-approved versions of OAC Chapters 3745-17, 3745-18, 3745-21 and 3745-31:

B018 - 58 hp natural gas-fired pump engine;
B019 - 75 hp natural gas-fired pump engine;
B020 - 600kW diesel emergency engine;
B021 - 6.5 MMBtu/hr diesel emergency generator;
B022 - 9.7 MMBtu/hr diesel emergency generator;
P005 - crucible sandblasters for machines 1, 2, 3, and 4;
P018 - crucible sandblasters for machines 5 and 8;
P022 - (6) B-type tubing furnaces;
P023 - (3) F-type tubing furnaces;
P024 - (3) I-type tubing furnaces;
P026 - (3) tubing wet cut saws;
P027 - (5) vacuum bake ovens;
P028 - tubing wet cut saws;
P030 - crucible coating process (Ortona);
P031 - tube trimmer #2;
P034 - auto cutter #2;
P044 - (6) I-type tubing furnaces;
P050 - crucible wet-cut saw with beveler;
P051 - (1) crucible belt-sander;
P052 - Spencer system-deck housekeeping;
P053 - 120 hp natural gas engine;
P054 - (3) crucible wet-cut saws; and
P055 - crucible band saw

[OAC rule 3745-77-07(A)(13)]

b) The following insignificant emissions units are exempt from permit requirements because they are not subject to any applicable requirements or because they meet the ”de minimis” criteria established in OAC rule 3745-15-05:

P002 auto-cutter #1/hand-cut saws;
T001 HF tank;
P045 (3) vacuum bake ovens;
P046 roadways/parking areas;
P047 end cut saw table - LD feedstock;
P048 large diameter tube cleaning and inspection;
P057 vacuum system;
P058 vacuum bake oven;
P059 wash tank;
P060 vacuum bake oven;
P061 LD wet cut saw;
B038 rod straightener;
B039 trial burners.

c) This facility is subject to the applicable requirements specified in OAC Chapter 3745-25. In accordance with Ohio EPA Engineering Guide #64, the emission control action programs, as specified in OAC rule 3745-25-03, shall be developed and submitted within 60 days after receiving notification from the Ohio EPA.

d) The permittee shall comply with all applicable provisions specified in 40 CFR Part 82, Subpart F as related to the operations at this facility.

e) Pursuant to 40 CFR Part 64, the permittee has submitted, and the Ohio EPA has approved a compliance assurance monitoring plan for emissions units P010, P011, P012, P020, and P035, at this facility. The permittee shall comply with the provisions of the plan during any operation of the aforementioned emissions units.

[Authority for term: 40 CFR Part 64]

C. Emissions Unit Terms and Conditions

1. P017, SAW

Operations, Property and/or Equipment Description:

Quartz rod/tubing trimmer with baghouse

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

(1) None.

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) (PTI 01-08511)	Particulate emissions shall not exceed 0.020 grains per dry standard cubic feet (gr/dscf) (equivalent to 1.23 pounds per hour at maximum flow rate) in the exhaust stream or there shall be no visible particulate emissions from the stack, whichever is less stringent. Total particulate emissions (PE) from this emissions unit shall not exceed 5.4 tons per year. See b)(2)a. and b. below.
b.	OAC rule 3745-17-07(A)	The visible PE limitations specified by this rule are less stringent than the visible particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
c.	OAC rule 3745-17-11(B)	The PE limitation specified by this rule is less stringent than the particulate emission limitations established pursuant to OAC rule 3745-31-05 (A)(3).

(2) Additional Terms and Conditions

a. During dry operation, the permittee shall only operate the quartz rod/tubing trimmer unit while venting emissions to the dust collection system (the exhaust from the dust collection system is vented outside).

b. The emission limitations of 1.23 pound particulate emissions per hour and 5.4 tons of particulate emissions per year were established for PTI purposes to reflect the potential to emit for this emissions unit after being vented to a dust collection system. Therefore, the parametric monitoring of the dust collection system as established in the following terms and conditions will ensure compliance with these emission limitations.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the following monitoring and record keeping requirements are as stringent as or more stringent than the monitoring and record keeping requirements contained in Permit to Install 01-08511, issued on April 9, 2002. The monitoring and record keeping requirements contained in the above-referenced PTI are subsumed into the monitoring and record keeping requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping requirements in the PTI.

[OAC rule 3745-77-07(A)(3)(a)(ii)]

a. The permittee shall perform checks once each operating day, using either certified or non-certified visible emissions readers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

i. the color of the emissions;

ii. whether the emissions are representative of normal conditions;

iii. if the emissions are not representative of normal conditions, the cause(s) of the abnormal emissions;

iv. the total duration of any visible emission incident; and

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

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required by the Ohio EPA Central District Office, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions readings, using USEPA methods and procedures. The results of any required mass emission tests and visible emission readings shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a

possible violation of the particulate mass emission limitation and/or visible emission limitation.

vi. If the checks show no visible emissions for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when the emissions unit is in operation). If a subsequent check indicates visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of no visible emissions.

[OAC rule 3745-77-07(C)(1)]

b. It has been determined that the normal range for the pressure drop across each baghouse is between 1 and 8 inches of water.

[OAC rule 3745-77-07(C)(1)]

c. The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the baghouses when the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s).

The permittee shall record the pressure drop across the baghouses on a daily basis. Whenever the monitored value for the pressure drop is observed to be outside the normal range identified above, the permittee shall promptly investigate the cause of the excursion. The permittee shall maintain records of the following information for each investigation:

i. the date and time the excursion is first observed;

ii. the magnitude of the excursion at that time;

iii. the date the investigation was conducted;

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

v. the findings and recommendations.

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

a. a description of the corrective action;

b. the date corrective action was completed;

c. the date and time the excursion ended;

d. the total period of time (in minutes) during which there was an excursion;

e. the pressure drop values immediately after the corrective action was implemented; and

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

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

This normal range for the pressure drop across the baghouses are not an operational restriction or limitation, and is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the normal range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the normal range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

[OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

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

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit quarterly excursions reports:

a. The excursion report shall identify the following

i. each excursion from control device operating parameters that have been detected by the monitoring and recordkeeping requirements specified in this permit, excluding excursions resulting from malfunctions reported in accordance with OAC rule 3745-15-06;

ii. period of time for each excursion (initially observed time and date, and end time and date);

iii. the probable cause of such excursions; and

iv. any corrective actions or preventive measures taken.

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

c. The written reports shall be submitted electronically through Air Services quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

[OAC rule 3745-77-07(C)(1)]

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

a. each incident described in Section e)(2)a.i. where a prompt investigation was not conducted;

b. each incident described in Section e)(2)a.i. where prompt corrective action, that would bring the baghouse pressure drop into normal range, was determined to be necessary and was not taken; and

c. each incident described in Section e)(2)a.i. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

d. The deviation report shall identify the following:

i. any deviations from federally enforceable emission limitations or operational restrictions, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit;

ii. the probable cause of such deviations, and;

iii. any corrective actions or preventive measures taken, shall be reported to OEPA, DAPC, CDO. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

[OAC rule 3745-77-07(C)(1)]

(4) The quarterly excursion reports and quarterly deviation reports may be combined to fulfill the requirements of Section e)(2) and e)(3).

[OAC rule 3745-77-07(C)(1)]

(5) The quarterly deviation reports and the quarterly excursion reports shall be submitted in accordance with Part A Section 2. of this permit.

[OAC rule 3745-77-07(C)(1)]

(6) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from any stack serving these emissions units and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

[OAC rule 3745-77-07(C)(1)]

(7) The permittee shall also submit annual reports that specify the total particulate emissions from this emissions unit for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for this emissions unit in the annual Fee Emission Report.

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

(1) Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the following testing requirements are as stringent as or more stringent than the testing requirements contained in Permit to Install 01-08511, issued on March 5, 2002: f)(2)a through f)(2)c. The testing requirements contained in the above-referenced Permit to Install are subsumed into the testing requirements of this operating permit, so that compliance with these requirements constitutes compliance with the underlying testing requirements in the Permit to Install.

[OAC rule 3745-77-07(A)(3)(a)(ii)]

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

a. <u>Emissions Limitation</u>:

Particulate emissions shall not exceed 0.020 gr/dscf (equivalent to 1.23 pounds per hour at maximum flow rate) in the exhaust stream or there shall be no visible particulate emissions from the stack, whichever is less stringent.

<u>Applicable Compliance Method</u>:

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated using Methods 1 through 5 of 40 CFR Part 60, Appendix A; otherwise, compliance shall be demonstrated by the absence of any visible emissions from the baghouse serving this emissions unit and using Method 22 of 40 CFR Part 60, Appendix A.

b. <u>Emission Limitation</u>:

PE shall not exceed 1.23 lbs/hr.

Applicable Compliance Method:

This emission limitation was calculated by multiplying the grain loading limit of the baghouse (0.020 gr/dscf) by the maximum air flow capacity of the baghouse (7,200 acfm), by 60 minutes per hour, and dividing by 7,000 grains per pound. Therefore, compliance shall be assumed provided compliance is maintained with the grain loading limit.

c. Emission Limitation:

PE shall not exceed 5.4 tons/yr.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual limitation was calculated by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

f) [OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

2. **P037, Crucible Cleaning System**

Operations, Property and/or Equipment Description:

Automated crucible cleaning system: chemical delivery system, acid etching system and scrubber.

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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) (PTI 01-08339)	Hydrogen fluoride emissions from the wet caustic scrubber stack shall not exceed 0.15 pound per hour. Hydrogen fluoride emissions shall not exceed 0.66 ton per year. See Sections b)(2)a. and b)(2)b. below.

(2) Additional Terms and Conditions

a. The permittee shall vent the emissions from this emissions unit to a wet caustic scrubber and operate the wet caustic scrubber while operating this emissions unit.

b. The emission limitations of 0.15 pound hydrogen fluoride emissions per hour and 0.66 ton hydrogen fluoride emissions per year were established for PTI purposes to reflect the potential to emit for this emissions unit after being vented to a wet caustic scrubber. Therefore, the parametric monitoring of the wet caustic scrubber as established in the following terms and conditions will ensure compliance with these emission limitations.

c. The emissions from the following components of the automated crucible cleaning system shall be vented to the wet caustic scrubber:

i. chemical delivery;

ii. acid etching (crucible cleaning); and

iii. spent acid waste tanks.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) It has been determined that the normal scrubber liquid flow rate is 100 gallons per minute or above and the normal range of the scrubber liquid pH is between 7 and 14.

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the scrubber flow rate, in gallons per minute and scrubber liquid pH when the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s).

The permittee shall record the scrubber flow rate and scrubber liquid pH on a daily basis. Whenever the monitored value for the flow rate and/or pH is observed to be outside the normal range identified above, the permittee shall promptly investigate the cause of the excursion. The permittee shall maintain records of the following information for each investigation:

a. the date and time the excursion is first observed;

b. the magnitude of the excursion at that time;

c. the date the investigation was conducted;

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

e. the findings and recommendations.

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

a. a description of the corrective action;

b. the date corrective action was completed;

c. the date and time the excursion ended;

d. the total period of time (in minutes) during which there was an excursion;

e. the pressure drop values immediately after the corrective action was implemented; and

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

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

This normal range for the scrubber flow rate and scrubber liquid pH are not an operational restriction or limitation, and is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the normal range for the flow rate and/or pH based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the normal range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

[OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

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

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit quarterly excursions reports:

a. The excursion report shall identify the following

i. each excursion from control device operating parameters that have been detected by the monitoring and recordkeeping requirements specified in this permit, excluding excursions resulting from malfunctions reported in accordance with OAC rule 3745-15-06;

ii. period of time for each excursion (initially observed time and date, and end time and date);

iii. the probable cause of such excursions; and

iv. any corrective actions or preventive measures taken.

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

c. The written reports shall be submitted electronically through Air Services quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

[OAC rule 3745-77-07(C)(1)]

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

a. each incident described in Section e)(2)a.i. where a prompt investigation was not conducted;

b. each incident described in Section e)(2)a.i. where prompt corrective action, that would bring the baghouse pressure drop, secondary voltage, and/or number of fields operating into normal ranges or above the minimum value, was determined to be necessary and was not taken; and

c. each incident described in Section e)(2)a.i. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

d. The deviation report shall identify the following:

i. any deviations from federally enforceable emission limitations or operational restrictions, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit;

ii. the probable cause of such deviations, and;

iii. any corrective actions or preventive measures taken, shall be reported to OEPA, DAPC, CDO. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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

(4) The quarterly excursion reports and quarterly deviation reports may be combined to fulfill the requirements of Section e)(2) and e)(3).

[OAC rule 3745-77-07(C)(1)]

(5) The quarterly deviation reports and the quarterly excursion reports shall be submitted in accordance with Part A Section 2. of this permit.

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. Emission Limitation:
Hydrogen fluoride emissions from the wet caustic scrubber stack shall not exceed 0.15 pound per hour.

Applicable Compliance Method:
Compliance with the pound per hour emission limit for hydrogen fluoride shall be demonstrated by multiplying the maximum uncontrolled emission rate of 10.55 pounds per hour by (1 - 98.6%) where 98.6% is the control efficiency of the scrubber for hydrogen fluoride.

If required by the Ohio EPA and/or U.S. EPA, the permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 26. Compliance with this emission limitation has been demonstrated based on the results of emission tests performed on September 15 and 16, 2003 that showed a maximum hourly emission rate of 0.0174 lb/hr.

b. Emission Limitation:
Hydrogen fluoride emissions shall not exceed 0.66 ton per year.

Applicable Compliance Method:
Compliance with the annual emission limitation for hydrogen fluoride may be assumed provided compliance is maintained with the pound per hour emission limitation for hydrogen fluoride. The annual emission limitation was established by multiplying the hourly emission limitation by 8760 hours per year and dividing by 2000 pounds per ton.

3. [OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

3. Emissions Unit Group -Arc Fusion Crucible Machines: P010, P011, P012, and P035

EU ID	Operations, Property and/or Equipment Description
P010	P-14 Arc Fusion Machine No. 4 – sand loading, fusion, pop-off and cleanout stages
P011	P-14 Arc Fusion Machine No. 5 – sand loading, fusion, pop-off and cleanout stages
P012	P-272 Arc Fusion Machine No. 8 – sand loading, fusion, pop-off and cleanout stages
P035	P-272 Arc Fusion Machine No. 9 – sand loading, fusion, pop-off and cleanout stages

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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) (PTI No. P0117199)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-11(B)(1) and 3745-31-05(D). <u>For emission unit P010</u>: Nitrogen oxides (NOx) emissions shall not exceed 10.8 tons per month averaged over a twelve-month rolling period. <u>For emission unit P011</u>: Nitrogen oxides (NOx) emissions shall not exceed 8.7 tons per month averaged over a twelve-month rolling period. <u>For emission units P012 and P035</u>: Nitrogen oxides (NOx) emissions from each unit shall not exceed 16.2 tons per month averaged over a twelve-month rolling period. <u>For emission units P010 and P011</u>: Particulate emissions (PE) from each unit shall not exceed 0.6 tons per month averaged over a twelve-month rolling

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		period. <u>For emission units P012 and P035</u>: PE from each unit shall not exceed 0.7 tons per month averaged over a twelve-month rolling period. See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) (PTI No. P0117199)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to PE from these air contaminant sources since the calculated annual emission rate is less than 10 tons per/yr (tpy) taking into account the voluntary restriction from OAC rule 3745-31-05(E). See b)(2)b. below.
c.	OAC rule 3745-31-05(E) (PTI No. P0117199)	The permittee shall vent the emissions from the sand loading, pop-off and cleanout stages through dust collection systems, and the fusion process through an ESP at all times while operating.
d.	OAC rule 3745-31-05(D) (synthetic minor to avoid PSD)	Total NOx emissions shall not exceed 249.7 tons per year for emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035, combined, as a rolling, 12-month summation of the NOx emissions
e.	OAC rule 3745-17-11(B)(1)	<u>For emission unit P010</u>: PE for this emission unit alone from all stacks serving this emissions unit shall not exceed 2.0 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II. <u>For emission unit P011</u>: PE for this emission unit alone from all stacks serving this emissions unit shall not exceed 1.6 pounds per hour based on

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Table I which is more stringent than the allowable PE rate from Figure II. <u>For emission units P012 and P035</u>: PE for these individual emissions units alone from all stacks serving these emissions units shall not exceed 1.9 pounds per hour based on Table I which is more stringent than the allowable PE rate from Figure II.
f.	OAC rule 3745-17-07(B)	See b)(2)f. below.
g.	OAC rule 3745-17-08(B)	See b)(2)e. below.
h.	40 CFR Part 64 – Compliance assurance monitoring (CAM)	See d)(6) below.

(2) Additional Terms and Conditions

a. This Best Available Technology (BAT) emission limit for PE applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

[OAC rule 3745-77-07(A)(1)]

b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

[OAC rule 3745-77-07(A)(1)]

c. The PE pounds per hour and tons per year emission limitations for each emissions unit was established to reflect the potentials to emit for the emissions units after control. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

d. The NOx ton per month limitation for each emissions unit was established to reflect the potential to emit for the unit without control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

e. Since the emissions unit are not located in an Appendix A area, pursuant to paragraph (A)(1) of OAC rule 3745-17-08, the requirements of OAC rule 3745-17-08(B) do not apply to these emissions units.

f. Pursuant to paragraph (B)(11)(e) of OAC rule 3745-17-07, the requirements of OAC rule 3745-17-07(B) do not apply to these emissions units.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) It has been determined that the normal range for the pressure drop across each baghouse is between 1 and 6 inches of water.

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the baghouses when the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s).

The permittee shall record the pressure drop across the baghouses on a daily basis. Whenever the monitored value for the pressure drop is observed to be outside the normal range identified above, the permittee shall promptly investigate the cause of the excursion. The permittee shall maintain records of the following information for each investigation:

a. the date and time the excursion is first observed;

b. the magnitude of the excursion at that time;

c. the date the investigation was conducted;

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

e. the findings and recommendations.

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

a. a description of the corrective action;

b. the date corrective action was completed;

c. the date and time the excursion ended;

d. the total period of time (in minutes) during which there was an excursion;

e. the pressure drop values immediately after the corrective action was implemented; and

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

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

This normal range for the pressure drop across the baghouses are not an operational restriction or limitation, and is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the normal range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the normal range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

[OAC rule 3745-77-07(C)(1)]

(3) It has been determined that the normal secondary voltage for each field of the ESP is 8 kV or above with a minimum of three fields out of a total of four operating.

[OAC rule 3745-77-07(C)(1)]

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the secondary voltage, in kilovolts for each field of the ESP when the emissions unit(s) is/are in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s).

The sensors and recorder for voltage shall monitor and record the secondary voltage for each field of the ESP on a daily basis. Whenever the secondary voltage of any field of the ESP falls below the normal value or less than 3 fields are operating, the permittee shall promptly investigate the cause of the excursion. The permittee shall maintain records of the following information for each investigation:

a. the date and time the excursion was first observed;

b. the magnitude of the excursion at that time;

c. the date the investigation was conducted;

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

e. the findings and recommendations.

In response to each required investigation to determine the cause of an excursion, the permittee shall take prompt corrective action to bring the control equipment parameters within the normal range(s) and/or above the minimum value, unless the

permitteedetermines that corrective action is not necessary and documents the reasons for that determination and the date and time the excursion ended. The permittee shall maintain records of the following information for each corrective action taken:

a. a description of the corrective action;

b. the date the corrective action was completed;

c. the date and time the excursion ended;

d. the total period of time (in minutes) during which there was an excursion;

e. the value of the corrected parameter t immediately after the corrective action was implemented; and

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

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

These normal range(s) and/or value for the secondary voltage and number of fields operating are not operational restrictions or limitations, and are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by Ohio EPA, Central District Office. The permittee may request revisions for the voltage or number of fields based upon information obtained during future performance tests that demonstrate compliance with the allowable PE emission limitation for this emissions unit. In addition, approved revisions to the range(s), minimum value or limitation will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

[OAC rule 3745-77-07(C)(1)]

(5) The permittee shall perform checks once each operating day, using either certified or non-certified visible emissions observers, when any emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;

b. 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 eliminate the visible emissions.

If visible emissions are present, a visible emissions incident has occurred. The observer does not have to document the exact start and end times for the visible emissions incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emissions 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.

If the checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to once each operating day until such time as there are 30 consecutive operating days of normal visible emissions.

4. [OAC rule 3745-77-07(C)(1)]

(6) The CAM plan for P010, P011, P012, and P035 has been developed for particulate emissions. The CAM performance indicators for the baghouses controlling these emissions units are visible emissions observations and the static pressure drop across the baghouse, which was established in accordance with the manufacturer's recommendations. The CAM performance indicator for the ESP controlling these emissions units is secondary voltage. When there are visible emissions at a baghouse and/or the static pressure drop or secondary voltage shows operation outside the indicator range(s), the permittee shall take corrective actions to restore operation of the emissions unit and/or its control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions, and shall comply with the reporting requirements specified in Section e) below. The emissions unit and control equipment shall be operated in accordance with the approved CAM Plan, or any approved revision of the Plan.

[OAC rule 3745-77-07(C)(1) and 40 CFR Part 64]

e) Reporting Requirements

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

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit quarterly excursions reports:

a. The excursion report shall identify the following

i. each excursion from control device operating parameters that have been detected by the monitoring and recordkeeping requirements specified in

this permit, excluding excursions resulting from malfunctions reported in accordance with OAC rule 3745-15-06;

ii. period of time for each excursion (initially observed time and date, and end time and date);

iii. the probable cause of such excursions; and

iv. any corrective actions or preventive measures taken.

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

c. The written reports shall be submitted electronically through Air Services quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

[OAC rule 3745-77-07(C)(1)]

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

a. each incident described in Section e)(2)a.i. where a prompt investigation was not conducted;

b. each incident described in Section e)(2)a.i. where prompt corrective action, that would bring the baghouse pressure drop, secondary voltage, and/or number of fields operating into normal ranges or above the minimum value, was determined to be necessary and was not taken; and

c. each incident described in Section e)(2)a.i. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

d. The deviation report shall identify the following:

i. any deviations from federally enforceable emission limitations or operational restrictions, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit;

ii. the probable cause of such deviations, and;

iii. any corrective actions or preventive measures taken, shall be reported to OEPA, DAPC, CDO. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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

[OAC rule 3745-77-07(C)(1)]

(4) The quarterly excursion reports and quarterly deviation reports may be combined to fulfill the requirements of Section e)(2) and e)(3).

[OAC rule 3745-77-07(C)(1)]

(5) The quarterly deviation reports and the quarterly excursion reports shall be submitted in accordance with Part A Section 2. of this permit.

[OAC rule 3745-77-07(C)(1)]

(6) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from any stack serving these emissions units and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. <u>Emission Limitation</u>:

NOx emissions shall not exceed 10.8 tons per month averaged over a twelve-month rolling period for emission unit P010, 8.7 tons per month averaged over a twelve-month rolling period for emission unit P011, and 16.2 tons per month averaged over a twelve-month rolling period for emission units P012 and P035.

<u>Applicable Compliance Method</u>:

The emission limitations were established by the following equation:

Emission limitation (EL) = (X crucibles/hr)* x (Y lbs of NOx/crucible)** x 8760 hours per year / 2,000 lbs/ton / 12 months per year, where:

X = 8.57 for emission units P010
X = 10 for emission unit P011;
X = 6.32 for emission units P012 and P035;
Y = 3.44 for emission unit P010
Y = 2.39 for emission unit P011; and
Y = 7.04 for emission units P012 and P035

* Maximum hourly crucible production.

** The emission factor was established through emission tests performed by GE Quartz, Inc. on 12/4/96, 12/5/96 and 12/19/96.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

b. Emission Limitation:

249.7 tons per year of NOx from emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035, combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part B – Facility-Wide Terms and Conditions, Section 6.a).

c. Emission Limitation:

Visible PE from any stack serving these emissions units shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section d)(6).

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

d. Emission Limitation:

PE for the emissions unit alone from all stacks serving this emissions unit shall not exceed 2.0 pounds per hour for P010, 1.6 pounds per hour for P011, and 1.9 pounds per hour for P012 and P035 based on Table I which is more stringent than the allowable PE rate from Figure II.

Applicable Compliance Method:

Compliance with this emission limitation may be demonstrated using the following equation:

hourly PE rate = L + F + P + C where:

PE = particulate emissions for this emissions unit
L = particulate emissions from loading of sand into crucible pots (lb/hr)
F = particulate emissions from crucible formation through electric arc fusion (lb/hr)
P = particulate emissions from crucible pop-off hood (lb/hr)
C = particulate emissions from hot sand clean out (lb/hr)

For P010:

L = (0.35 tons/hr)* x (0.174 lb/ton)** x (0.01)***

F = (8.57 crucibles/hr)* x (0.595 lb PE/crucible)** x (0.1)***

P = (0.35 tons/hr)* x (0.058 lb/ton)** x (0.01)***

C = (154 lbs/hr)* x (0.75 lb PE /lb sand)** x (0.001)***

For P011:

L = (484 lbs/hr)* x (0.174 lb/ton)** x (0.01)*** x (1 ton/2000 lbs)

F = (10 crucibles/hr)* x (0.37lb PE/crucible)** x (0.1)***

P = (484 lbs/hr)* x (0.058 lb/ton)** x (0.01)*** x (1 ton/2000 lbs)

C = (150 lbs/hr)* x (0.75 lb PE / lb sand)** x (0.001)***

For P012 and P035:

L = (631 lbs/hr)* x (0.174 lb/ton)** x (0.01)*** x (1 ton/2000 lbs)

F = (6.32 crucibles/hr)* x (0.952lb PE/crucible)** x (0.1)***

P = (631 lbs/hr)* x (0.058 lb/ton)** x (0.01)*** x (1 ton/2000 lbs)

C = (210 lbs/hr)* x (0.75 lb PE / lb sand)** x (0.001)***

* L - The hourly process weight rate.
F - The maximum hourly crucible production
P - The hourly process weight rate.
C - The maximum hot sand dumped per hour.

** L&P -The transfer emission factor was derived with information from AP-42, 5th Edition, Volume I, Chapter 11, Mineral Products Industry, Table 11.12-2, dated January 1995.
F -This emission factor was established through emission tests performed by GE Quartz, Inc. Newark Plant from 12/17/96 through 12/19/96.
C - This emission factor was estimated and provided by GE Quartz, Inc. based on engineering judgment.

*** L - The control efficiency of the loading baghouses is assumed to be 99%.
F - The control efficiency of the ESP is assumed to be 90%.
P - The control efficiency of the baghouse is assumed to be 99%.
C - The control efficiency of the baghouse is assumed to be 99.9%.

Compliance with this emission limitation was demonstrated through emission tests performed on January 30, 2002. If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

e. Emission Limitation:

PE for this emissions unit alone from all stacks serving this emissions unit shall not exceed 0.6 tons per month averaged over a twelve-month rolling period for P011 and 0.7 tons per month averaged over a twelve-month rolling period for P012 and P035.

Applicable Compliance Method:

Compliance with the monthly emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE, as calculated in f)(1)d. above. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

[OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

4. **Emissions Unit Group - Crucible Coolers: P020, P033,**

EU ID	Operations, Property and/or Equipment Description
P020	Six Crucible Coolers for Crucible Machines No. 4, 5, 8.
P033	Two Crucible Coolers for Crucible Machine No. 9.

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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 3745-31-05(A)(3) (PTI 01-08824)	<u>For emission unit P020:</u> Particulate emissions (PE) from the exhaust stream shall not exceed 0.62 pound per hour and there shall be no visible particulate emissions. <u>For emission unit P033:</u> PE from the exhaust stream shall not exceed 0.3 pound per hour and there shall be no visible particulate emissions. <u>For emission unit P020:</u> PE shall not exceed 2.72 tons per year from the stack serving this emissions unit. <u>For emission unit P033:</u> PE shall not exceed 1.31 tons per year from the stack serving this emissions unit.
b.	OAC rule 3745-17-07(B)	See b)(2)a. below.
c.	OAC rule 3745-17-08(B)	See b)(2)b. below.
d.	OAC rule 3745-17-07(A)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to the requirement specified in OAC rule 3745-31-05(A)(3).

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-17-11(B)	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to the requirement specified in OAC rule 3745-31-05(A)(3).
f.	40 CFR Part 64 – Compliance assurance monitoring (CAM)	See d)(4) below.

(2) Additional Terms and Conditions

a. Pursuant to paragraph (B)(11)(e) of OAC rule 3745-17-07, the requirements of OAC rule 3745-17-07(B) do not apply to this emissions unit.

b. Since this emissions unit is not located in an Appendix A area, pursuant to paragraph (A)(1) of OAC rule 3745-17-08, the requirements of OAC rule 3745-17-08(B) do not apply to this emissions unit.

c. The permittee shall vent the PE to the baghouse at all times when the emissions unit is in operation.

c) Operational Restrictions.

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) It has been determined that the normal range for the pressure drop across each baghouse is between 1 and 6 inches of water.

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the baghouses when the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s).

The permittee shall record the pressure drop across the baghouses on a daily basis. Whenever the monitored value for the pressure drop is observed to be outside the normal range identified above, the permittee shall promptly investigate the cause of the excursion. The permittee shall maintain records of the following information for each investigation:

a. the date and time the excursion is first observed;

b. the magnitude of the excursion at that time;

c. the date the investigation was conducted;

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

e. the findings and recommendations.

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

a. a description of the corrective action;

b. the date corrective action was completed;

c. the date and time the excursion ended;

d. the total period of time (in minutes) during which there was an excursion;

e. the pressure drop values immediately after the corrective action was implemented; and

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

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

This normal range for the pressure drop across the baghouses are not an operational restriction or limitation, and is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the appropriate Ohio EPA District Office or local air agency. The permittee may request revisions to the normal range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the normal range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

[OAC rule 3745-77-07(C)(1)]

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

a. the color of the emissions;

b. 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.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA approved methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when the emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to once each operating day until such time as there are 30 consecutive operating days of normal visible emissions.

[OAC rule 3745-77-07(C)(1)]

(4) The CAM planfor P020 has been developed for particulate emissions. The CAM performance indicators for the baghouse controlling this emissions unit are visible emissions and the static pressure drop across the baghouse, which was established in accordance with the manufacturer's recommendations. When there are visible emissions and/or the static pressure drop shows operation outside the indicator range(s), the permittee shall take corrective actions to restore operation of the emissions unit and/or its control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions, and shall comply with the reporting requirements specified in Section e) below. The emissions unit and control equipment shall be operated in accordance with the approved CAM Plan, or any approved revision of the Plan.

[OAC rule 3745-77-07(C)(1) and 40 CFR Part 64]

e) Reporting Requirements

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

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit quarterly excursions reports:

a. The excursion report shall identify the following

i. each excursion from control device operating parameters that have been detected by the monitoring and recordkeeping requirements specified in this permit, excluding excursions resulting from malfunctions reported in accordance with OAC rule 3745-15-06;

ii. period of time for each excursion (initially observed time and date, and end time and date);

iii. the probable cause of such excursions; and

iv. any corrective actions or preventive measures taken.

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

c. The written reports shall be submitted electronically through Air Services quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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

a. each incident described in Section e)(2)a.i. where a prompt investigation was not conducted;

b. each incident described in Section e)(2)a.i. where prompt corrective action, that would bring the baghouse pressure drop, secondary voltage, and/or number of fields operating into normal ranges or above the minimum value, was determined to be necessary and was not taken; and

c. each incident described in Section e)(2)a.i. where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

d. The deviation report shall identify the following:

i. any deviations from federally enforceable emission limitations or operational restrictions, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit;

ii. the probable cause of such deviations, and;

iii. any corrective actions or preventive measures taken, shall be reported to OEPA, DAPC, CDO. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

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

[OAC rule 3745-77-07(C)(1)]

(4) The quarterly excursion reports and quarterly deviation reports may be combined to fulfill the requirements of Section e)(2) and e)(3).

[OAC rule 3745-77-07(C)(1)]

(5) The quarterly deviation reports and the quarterly excursion reports shall be submitted in accordance with Part A Section 2. of this permit.

[OAC rule 3745-77-07(C)(1)]

(6) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from any stack serving these emissions units and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. <u>Emission Limitation</u>:

Particulate emissions (PE) from the exhaust stream shall not exceed 0.62 pound per hour for P020 and 0.3 pound per hour for P033.

<u>Applicable Compliance Method for P020</u>:

Crucible coolers for crucible machine 4
(8.70 lbs/hr) x (1-0.98) = 0.174 lb/hr

Crucible coolers for crucible machine 5
(8.70 lbs/hr) x (1-0.98) = 0.174 lb/hr

Crucible coolers for crucible machine 8
(13.32 lbs/hr) x (1-0.98) = 0.27 lb/hr

Total = 0.62 lb PE/hr

<u>Applicable Compliance Method for P033</u>:

Crucible coolers for crucible machine 4

(13.86 lbs/hr) x (1-0.98) = 0.3 lb/hr

The emission factors of 8.70 lbs/hr, 13.32 lbs/hr, and 13.86 lbs/hr were provided by GE Quartz. The emission factors were derived from experimental data and mass balance calculations. The experimental data is based upon experiments which determined the amount of loose sand adhering to the product surface.

b. Emission Limitation:

There shall be no visible particulate emissions.

Applicable Compliance Method:

If required compliance with this emission limitation shall be demonstrated using Test Method 22-like visible emission observations. Although Test Method 22 applies to fugitive emissions units, the visible/no visible emissions observation technique of Test Method 22 can be applied to ducted emissions, i.e., Test Method 22-like visible emission observations.

c. Emission Limitation:

Particulate emissions shall not exceed 2.72 tons per year from the stack servicing P020 and 1.31 tons per year from the stack servicing P033.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual limitation was calculated by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

[OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

5. **Emissions Unit Group -Crucible Machines High Purity: P009, P025,**

EU ID	Operations, Property and/or Equipment Description
P009	High purity crucible machine No. 3 - uncontrolled
P025	High purity crucible machine No. 1 - uncontrolled

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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) (PTI No. P0104785)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1) and 3745-31-05(D). <u>For emission unit P009:</u> Nitrogen oxides (NOx) emissions shall not exceed 3.3 pounds per hour (lbs/hr) from the stack serving this emissions unit. <u>For emission unit P025:</u> Nitrogen oxides (NOx) emissions shall not exceed 4.13 pounds per hour from the stack serving this emissions unit. <u>For emission unit P009:</u> Particulate emissions (PE) shall not exceed 3.25 tons per year from the stack serving this emissions unit. <u>For emission unit P025:</u> PE shall not exceed 4.6 tons per year from the stack serving this emissions unit.
b.	OAC rule 3745-31-05(D) (synthetic minor to avoid PSD)	Total NOx emissions shall not exceed 18.1 tons per year, from the two high purity crucible machine stacks, for

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		emissions units P009 and P025, combined, as a rolling, 12-month summation of the NOx emissions. See 1.c)(1) below.
c.	OAC rule 3745-17-07(A)	Visible PE from the stacks serving these emissions units shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
d.	OAC rule 3745-17-11(B)(1)	<u>For emission unit P009:</u> PE from the stack serving this emissions unit shall not exceed 0.74 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. <u>For emission unit P025:</u> PE from the stack serving this emissions unit shall not exceed 1.042 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

(2) Additional Terms and Conditions

a. The PE and NOx pounds per hour and PE tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop any additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

c) Operational Restrictions

(1) The maximum crucible production for emissions units P009 and P025, combined, shall not exceed 75,416 crucibles, based upon a rolling, 12-month summation of the crucible production figures.

6. [OAC rule 3745-77-07(A)(1)]

d) Monitoring and/or Recordkeeping Requirements

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

a. the total number of crucibles produced in emissions units P009 and P025;

b. the total NOx emission rate from emissions units P009 and P025, combined, in pounds, calculated using the following formula:

{number of crucibles produced monthly in P025}*{1.02 lbs/crucible} + {number of crucibles produced monthly in P009}*{0.48 lb/crucible}; and

c. the rolling, 12-month summation of NOx emissions and the rolling, 12-month summation of crucibles produced from emissions units P009 and P025, combined.

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall perform checks once each operating day, using either certified or non-certified visible emissions observers, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the color of the emissions;
b. 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 eliminate the visible emissions.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when this emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to once each operating day until such time as there are 30 consecutive operating days of normal visible emissions.

[OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month crucible production restriction and NOx emission

limitation. The quarterly deviation reports shall be submitted in accordance with A. Standard Terms and Conditions – Section 2.of this permit.

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit annual reports that specify the total NOx emissions from emissions units P009 and P025 combined for the previous calendar year. The reports shall be submitted by April 15 of each year. This reporting requirement may be satisfied by including and identifying the specific emission data for these emissions units in the annual Fee Emission Report.

[OAC rule 3745-77-07(C)(1)]

(3) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, Central District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. <u>Emission Limitation</u>:

NOx emissions shall not exceed 3.3 pounds per hour for P009 and 4.13 pounds per hour from P025 from the stack serving these emission units.

<u>Applicable Compliance Method</u>:

Compliance with this emission limitation may be demonstrated by multiplying the maximum hourly number of crucibles produced in these emissions units (6 for P009 and 3.5 for P025) by an emission factor of 0.48 lb/crucible for P009 and 1.02 for P025 (based on emission tests performed by GE Quartz, Inc. Newark Plant on 3/24/98).

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 4 and 7E.

b. <u>Emission Limitation</u>:

Total NOx emissions shall not exceed 18.1 tons per year, from the two high purity crucible machine stacks, for emissions units P009 and P025, combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation based on the record keeping required in section d)(1).

c. Emission Limitation:

Visible PE from the stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the emission limitation based on the record keeping required in section d)(2).

If required by the Ohio EPA and/or U.S. EPA, compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9.

[3745-17-03(B)(1)]

d. Emission Limitation:

PE shall not exceed 0.74 pound per hour for P009 and 1.042 pounds per hour for source P025 from the stacks serving these emissions units.

Applicable Compliance Method:

Compliance with this emission limitation was established through emission tests performed on August 2, 1999 that demonstrated an hourly emission rate of 0.017 lb/hr for P009 and 0.057 lb/hr for P025. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

e. Emission Limitation:

PE shall not exceed 3.25 tons per year for P009 and 4.6 tons per year for P025 from the stacks serving these emissions units.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

[OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

6. Emissions Unit Group -Large Diameter Lathes: B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, P014, P015, P021, and P032

EU ID	Operations, Property and/or Equipment Description
B001	Large Diameter Lathe No. 1 - 3.78 MMBtu/hr
B002	Large Diameter Lathe No. 2 - 3.78 MMBtu/hr
B003	Large Diameter Lathe No. 3 - 3.78 MMBtu/hr
B006	Large Diameter Lathe No. 6 - 3.78 MMBtu/hr
B023	Large Diameter Lathe No. 10 - 5.04 MMBtu/hr
B024	Large Diameter Lathe No. 11 - 5.04 MMBtu/hr
B025	Large Diameter Lathe No. 12 - 5.04 MMBtu/hr
B026	Large Diameter Lathe No. 13 - 5.04 MMBtu/hr
B027	Large Diameter lathe No. 14 - 5.04 MMBtu/hr
B028	Large Diameter Lathe No. 16 - 5.04 MMBtu/hr
B029	Large Diameter Lathe No. 17 - 5.04 MMBtu/hr
B030	Large Diameter Lathe - No. 18 - 6.3 MMBtu/hr
B031	Large Diameter Lathe No. 15 - 5.04 MMBtu/hr
B032	Large Diameter Lathe No. 19 - 5.04 MMBtu/hr
B033	Large Diameter Lathe No. 20 - 5.04 MMBtu/hr
P014	Large Diameter Lathe No. 7 - 4.56 MMBtu/hr
P015	Large Diameter Lathe No. 8 - 4.56 MMBtu/hr
P021	Large Diameter Repair Lathe No. 1 - 0.78 MMBtu/hr
P032	Large Diameter Lathe No. 9 - 5.04 MMBtu/hr

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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) (PTI No. P0117199)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1), and 3745-31-05(D). <u>For emission units B001 – B003 and B006:</u> Nitrogen oxides (NOx) emissions for each emissions unit shall not exceed 16.6 tons

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		per month averaged over a twelve-month rolling period. <u>For emission units B023 – B029, B031 - B033 and P032:</u> NOx emissions for each emissions unit 14.3 tons per month averaged over a twelve-month rolling period. <u>For emission unit B030:</u> NOx emissions shall not exceed 17.8 tons per month averaged over a twelve-month rolling period. <u>For emission units P014 and P015:</u> NOx emissions for each emissions unit shall not exceed 20.1 tons per month averaged over a twelve-month rolling period. <u>For emission unit P021:</u> NOx emissions for this emissions unit shall not exceed 2.4 tons per month averaged over a twelve-month rolling period. <u>For emission units B001 – B003, B006, B023-B033, P014, P015, P021, and P032:</u> Particulate emissions (PE) for each emissions unit shall not exceed 0.2 tons per month averaged over a twelve-month rolling period. See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) (PTI No. P0117199)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE emissions from these air contaminant sources since the potential to emit is less than 10 tons/year. See b)(2)b. below.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-31-05(D) (synthetic minor to avoid PSD)	Total NOx emissions shall not exceed 249.7 tons per year for emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035, combined, as a rolling, 12-month summation of the NOx emissions.
d.	OAC rule 3745-17-07(A)	Visible PE from the SCR unit stack shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
e.	OAC rule 3745-17-11(B)(1)	<u>For emission units B001-B003, B006, B023-B033, P014, P015, P021, and P032:</u> PE for each emissions unit shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

(2) Additional Terms and Conditions

a. This Best Available Technology (BAT) emission limit for PE applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

[OAC rule 3745-77-07(A)(1)]

b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

[OAC rule 3745-77-07(A)(1)]

c. The PE monthly emissions averaged over a twelve-month rolling period emission limitations for these emissions units were established to reflect the potentials to emit for these emissions units after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

d. The NOx monthly emissions averaged over a twelve-month rolling period limitation for these emissions units were established to reflect the potential to emit for these units without control. Therefore, it is not necessary to develop

additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) For monitoring and record keeping requirements for the rolling, 12-month NOx emission limitation, see Part B. – Facility-Wide Terms and Conditions, Section 4.a).

[OAC rule 3745-77-07(C)(1)]

(2) For monitoring and record keeping requirements for the visible PE limitation, see Part B. – Facility-Wide Terms and Conditions, Section 4.e).

[OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

(1) For reporting requirements for the rolling, 12-month NOx emission limitation, see Part B. – Facility-Wide Terms and Conditions, Section 5.a).

[OAC rule 3745-77-07(C)(1)]

(2) For reporting requirements for the visible PE limitation from the SCR unit stack, see Part B. – Facility-Wide Terms and Conditions, Section 5.d).

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. <u>Emission Limitation</u>:

NOx emissions for each emissions unit alone shall not exceed 16.6 tons per month averaged over a twelve-month rolling period for emissions units B001 – B003 and B006, 14.3 tons per month averaged over a twelve-month rolling period for emissions units B023 - B029, B031 - B033, and P032, 17.8 tons per month averaged over a twelve-month rolling period for B030, 20.1 tons per month averaged over a twelve-month rolling period for emissions units P014 and P015, and 2.4 tons per month averaged over a twelve-month rolling period for emissions unit P021.

Applicable Compliance Method:

The emission limitations were established by multiplying the maximum hourly MMBTU demand (X), by an emission factor of (Y) lbs/MMBTU (derived from emissions tests performed on March 25, 1998), by 8760 hours/yr, dividing by 2000 lbs/ton, and dividing by 12 months per year, where:

X = 3.78 and Y= 12.06 for emissions units B001 – B003 and B006;
X = 5.04 and Y = 7.77 for emissions units B023 – B029, B031, B033 and P032;
X = 6.3 and Y = 7.77 for emissions unit B030;
X = 4.56 and Y = 12.06 for emissions units P014 and P015; and
X = 0.78 and Y = 8.5 for emissions units P021;

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

b. Emission Limitation:

NOx emissions shall not exceed 249.7 tons per year of NOx from emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032, and P035, combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part B – Facility-Wide Terms and Conditions, Section 6.a)(1).

c. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part B – Facility-Wide Terms and Conditions, Section 6.a)(2).

d. Emission Limitation:

PE for each emissions unit shall not exceed 0.551 pound per hour.

Applicable Compliance Method:
Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission

limitation through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

e. Emission Limitation:

PE for each emissions unit shall not exceed 0.2 tons per month averaged over a twelve-month rolling period.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE, as calculated in in f)(1)d. above. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

[OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

7. **Emissions Unit Group -Window Grade Quartz Machines: P038, P039, P040, P041, P042, P043,**

EU ID	Operations, Property and/or Equipment Description
P038	Window Grade Quartz Machine No. 1
P039	Window Grade Quartz Machine No. 2
P040	Window Grade Quartz Machine No. 3
P041	Window Grade Quartz Machine No. 4
P042	Window Grade Quartz Machine No. 5
P043	Window Grade Quartz Machine No. 6

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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) (PTI No. 01-01308)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A), 3745-17-11(B)(1), and 3745-31-05(D). See b.2.a) Nitrogen oxides (NOx) emissions from this emissions unit shall not exceed 1.28 pounds per hour and 5.6 tons per year. Carbon Monoxide (CO) emissions from this emissions unit shall not exceed 1.62 pounds per hour and 7.10 tons per year. Particulate emissions (PE) for this emissions unit shall not exceed 2.41 tons per year.
b.	OAC rule 3745-17-07(A)	Visible PE shall not exceed 20% opacity, as a 6-minute average. Except as provided by rule.
c.	OAC rule 3745-17-11(B)(1)	PE shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II.

(2) Additional Terms and Conditions

a. The PE, CO, and NOx pounds per hour and tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

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

a. the color of the emissions;

b. 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.

Note: The presence of any visible particulate emissions may or may not indicate a violation of the particulate mass emission limitation and/or visible emission limitation. If required, compliance with the particulate mass emission limitation and the visible emission limitation shall be determined by performing concurrent mass emission tests and visible emissions observations, using USEPA approved methods and procedures. The results of any required mass emission tests and visible emissions observations shall be used in determining whether or not the presence of any visible particulate emissions is indicative of a possible violation of the particulate mass emission limitation and/or visible emission limitation.

If the checks show visible emissions that are representative of normal operation for 30 consecutive operating days, the required frequency of visible emissions checks may be reduced to weekly (once per week, when the emissions unit is in operation). If a subsequent check indicates abnormal visible emissions, the frequency of emissions checks shall revert to daily until such time as there are 30 consecutive operating days of normal visible emissions.

[OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

(1) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to Ohio EPA, CDO by January 31 and July 31 of each year and shall cover the previous 6-month period.

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. Emission Limitation:

NOx emissions for this emissions unit shall not exceed 1.28 pounds per hour.

Applicable Compliance Method:

This emission limitation was established by multiplying the maximum hourly MMBtu demand (0.85) by an emission factor of 1.5 lbs NOx/MMBtu (derived from emissions tests performed, April 25, 2006 on the Window Grade Quartz Unit at the GE Quartz Highland Road Plant.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

b. Emission Limitation:

NOx emissions for this emissions unit shall not exceed 5.6 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for NOx shall be assumed provided compliance is maintained with the pound per hour emission limitation for NOx. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

c. Emission Limitation:

CO emissions for this emission unit shall not exceed 1.62 pounds per hour.

Applicable Compliance Method:
This emission limitation was established by multiplying the maximum hourly MMBtu demand (0.85) by an emission factor of 1.90 lbs CO/MMBtu (derived from

emissions tests performed, April 25, 2006 on the Window Grade Quartz Unit at the GE Quartz Highland Road Plant.

d. Emission Limitation:

CO emissions for this emissions unit shall not exceed 7.1 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for CO shall be assumed provided compliance is maintained with the pound per hour emission limitation for CO. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

e. Emission Limitation:

Visible PE shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Section d)(1).

If required compliance shall be determined through visible emissions observations performed in accordance with U.S. EPA method 9.

f. Emission Limitation:

PE shall not exceed 0.551 pound per hour.

Applicable Compliance Method:

If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

g. Emission Limitation:

PE for this emissions unit shall not exceed 2.41 tons per year.

Applicable Compliance Method:

Compliance with the annual emission limitation for PE shall be assumed provided compliance is maintained with the pound per hour emission limitation for PE. The annual emission limitation was established by multiplying the hourly limitation by 8760 hours per year and dividing by 2000 pounds per ton.

[OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None

8. **Emissions Unit Group - Large Diameter Lathes: B034, B035, B036, B037**

EU ID	Operations, Property and/or Equipment Description
B034	Large Diameter Lathe No. 21
B035	Large Diameter Lathe No. 22
B036	Large Diameter Lathe No. 23
B037	Large Diameter Lathe No. 24

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific 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) (PTI No. P0117199)	The requirements of this rule also include compliance with the requirements of OAC rules 3745-31-05(D), 3745-17-07(A) and 3745-17-11(B)(1). Nitrogen oxides (NOx) emissions for each emissions unit shall not exceed 32.3 tons per month averaged over a twelve-month rolling period. Particulate emissions (PE) for this emissions unit shall not exceed 0.15 tons per month averaged over a twelve-month rolling period. Carbon monoxide (CO) emissions for this emissions unit shall not exceed 0.11 tons per month averaged over a twelve-month rolling period. See b)(2)a. below.
b.	OAC rule 3745-31-05(A)(3)(a)(ii) (PTI No. P0117199)	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and CO

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		emissions from this air contaminant source since the potential to emit is less than 10 tons/year. See b)(2)b. below.
c.	OAC rule 3745-31-05(D) (synthetic minor to avoid PSD)	Total NOx emissions from the SCR unit stack shall not exceed 210.7 tons per year for emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032,and P035, combined, as a rolling, 12-month summation of the NOx emissions. Total NOx emissions from emissions units B034, B035, B036 and B037 shall not exceed 39.0 tons per year combined, as a rolling 12-month summation of the NOx emissions.
d.	OAC rule 3745-17-07(A)	Visible PE from any stack serving theses emission units shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.
e.	OAC rule 3745-17-11(B)(1)	PE for this emissions unit alone shall not exceed 0.551 pound per hour based on Table I which is more stringent than the allowable PE rate from Figure II. [See b)(2)c] The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 375-31-05(A)(3).

(2) Additional Terms and Conditions

a. This Best Available Technology (BAT) emission limit for PE and CO applies until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

b. These requirements apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the Ohio SIP.

c. Once US EPA approves the December 1, 2006 version of 3745-31-05, then the requirements of OAC rule 3745-17-11(B)(1) become effective.

d. The PE pounds per hour and tons per year emission limitations for this emissions unit were established to reflect the potentials to emit for this emissions unit after control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

e. The NOx monthly emissions averaged over a twelve-month rolling period limitation for this emissions unit was established to reflect the potential to emit for the unit without control. Therefore, it is not necessary to develop additional monitoring, record keeping, and/or reporting requirements to ensure compliance with these emission limitations.

c) Operational Restrictions

(1) None

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain daily records of the natural gas usage (mmscf) by emissions units B034, B035, B036 and B037 combined.

[OAC rule 3745-77-07(C)(1)]

(2) The permittee shall maintain daily records of the hours when emissions units B034, B035, B036, or B037 were operated.

[OAC rule 3745-77-07(C)(1)]

(3) The permittee shall calculate emissions of NOx each day from emissions units B034, B035, B036, and B037 combined based on the record keeping in Part B. – Facility-Wide Terms and Conditions, Section 4.d) or from the natural gas usage and SCR efficiency data as follows:

NOx emissions rate = natural gas usage (mmscf/day) x 1050 mmbtu/mmscf x 11.7 lb/mmbtu x (1 – daily average SCR control efficiency as determined by the CEMs when the SCR is in operation).

[OAC rule 3745-77-07(C)(1)]

(4) The permittee shall calculate monthly emissions of NOx from emissions units B034, B035, B036, and B037 combined by summing the individual daily emissions calculated in d)(3) for all hours of operation in the month. The permittee shall also calculate the rolling, 12-month NOx emissions from emissions units B034, B035, B036, and B037 combined.

[OAC rule 3745-77-07(C)(1)]

(5) For monitoring and record keeping requirements for the visible PE, see Part B. – Facility-Wide Terms and Conditions, Section 4.e).

[OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

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

[OAC rule 3745-77-07(C)(1)]

(2) For reporting requirements for the rolling, 12-month NOx emission limitation, see Part B. – Facility-Wide Terms and Conditions, Section 5.a).

[OAC rule 3745-77-07(C)(1)]

(3) For reporting requirements for the visible PE limitation , see Part B. – Facility-Wide Terms and Conditions, Section 5.d).

[OAC rule 3745-77-07(C)(1)]

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

a. all exceedances of the rolling, 12-month NOx emission limitation for emissions units B034, B035, B036, and B037 combined.

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

[OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. <u>Emission Limitation</u>:

NOx emissions for the emissions unit alone shall not exceed 32.3 tons per month averaged over a twelve-month rolling period.

Applicable Compliance Method:

The emission limitations were established by multiplying the maximum hourly MMBTU demand 7.56, by an emission factor of 11.7 lbs/MMBTU (derived from emissions tests performed on March 25, 1998), by 8760 hours/yr, divided by 2000 lbs/ton, and dividing by 12 months/yr.

If required by the Ohio EPA and/or U.S. EPA, compliance shall be demonstrated through emission testing in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

b. Emission Limitation:

NOx emissions shall not exceed 249.7 tons per year from emissions units B001, B002, B003, B006, B023, B024, B025, B026, B027, B028, B029, B030, B031, B032, B033, B034, B035, B036, B037, B038, B039, P010, P011, P012, P014, P015, P021, P032, and P035 combined, as a rolling, 12-month summation of the NOx emissions.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part B – Facility-Wide Terms and Conditions, Section 6.a)(1).

c. Emission Limitation:

Visible PE from any stack serving these emission units shall not exceed 20% opacity, as a 6-minute average, except as provided by rule.

Applicable Compliance Method:

The permittee shall demonstrate compliance with this emission limitation as described in Part B – Facility-Wide Terms and Conditions, Section 6.a)(2).

d. Emission Limitation:

PE for this emissions unit shall not exceed 0.15 tons per month averaged over a twelve-month rolling period.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the results of emission tests performed on May 28, 1998 that demonstrated a maximum hourly emission rate of 0.4 lb/hr. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 - 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

e. Emission Limitation:

CO emissions for this emissions unit shall not exceed 0.11 tons per month averaged over a twelve-month rolling period.

Applicable Compliance Method:

Compliance with this emission limitation was demonstrated based upon the AP-42 emission factors. If required by the Ohio EPA and/or U.S. EPA, the permittee shall demonstrate compliance with this emission limitation through emission testing performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 – 4 and 10.

[OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.