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

10/2/2014

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: Cristal USA Inc., Ashtabula Complex Plant 2
Facility ID: 0204010193
Permit Type: Renewal
Permit Number: P0084097

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,

Erica R. Engel-Ishida, Interim Manager
Permit Issuance and Data Management Section, DAPC

Cc: Ohio EPA DAPC, Northeast District Office

PROPOSED

Division of Air Pollution Control
Title V Permit
for
Cristal USA Inc., Ashtabula Complex Plant 2

Facility ID:	0204010193
Permit Number:	P0084097
Permit Type:	Renewal
Issued:	10/2/2014
Effective:	To be entered upon final issuance
Expiration:	To be entered upon final issuance

Division of Air Pollution Control
Title V Permit
for
Cristal USA Inc., Ashtabula Complex Plant 2

Table of Contents

Authorization 1
A. Standard Terms and Conditions 2
1. Federally Enforceable Standard Terms and Conditions 3
2. Monitoring and Related Record Keeping and Reporting Requirements 3
3. Reporting of Any Exceedence of a Federally Enforceable Emission Limitation or Control Requirement Resulting From Scheduled Maintenance 6
4. Risk Management Plans 7
5. Title IV Provisions 7
6. Severability Clause 7
7. General Requirements 7
8. Fees 8
9. Marketable Permit Programs 8
10. Reasonably Anticipated Operating Scenarios 9
11. Reopening for Cause 9
12. Federal and State Enforceability 9
13. Compliance Requirements 10
14. Permit Shield 11
15. Operational Flexibility 11
16. Emergencies 12
17. Off-Permit Changes 12
18. Compliance Method Requirements 12
19. Insignificant Activities or Emissions Levels 13
20. Permit to Install Requirement 13
21. Air Pollution Nuisance 13
22. Permanent Shutdown of an Emissions Unit 13
23. Title VI Provisions 13
24. Reporting Requirements Related to Monitoring and Record Keeping Requirements Under State Law Only 14
25. Records Retention Requirements Under State Law Only 14
26. Inspections and Information Requests 14
27. Scheduled Maintenance/Malfunction Reporting For State-Only Requirements 15
28. Permit Transfers 15

29. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations 15
30. Submitting Documents Required by this Permit 16
B. Facility-Wide Terms and Conditions 17
C. Emissions Unit Terms and Conditions 31
1. B013, B014, B015 and B016, Natural Gas Fired Combustion Turbine Group 32
2. B017, Natural Gas Fired Combustion Turbine 47
3. F001 and F002, Roadways and Parking Lots Group 59
4. P001, Oxygen Preheater and TiCl4 Vaporizer 64
5. P002, Chlorination Process 78
6. P011, Ore and Coke Recovery 87
7. P012, Spray Dryer #1 - TiO2 Unit 95
8. P013, Spray Dryer #2 - TiO2 Unit 100
9. Emissions Unit Group -P015 - #7 ore feed system , P016 - #7 coke feed system, P017 - #8 ore feed system, P018 - #8 coke feed system, P019 - #9 ore feed system, P020 - #9 coke feed system 107
10. P903, Coke and Ore Unloading, Storage, and Handling 111

Authorization

Facility ID:	0204010193
Facility Description:	Manufacturing of titanium dioxide
Application Number(s):	A0014610, A0014611, A0046687, A0049495, A0050890
Permit Number:	P0084097
Permit Description:	Renewal of the Title V operating permit for a titanium dioxide manufacturer
Permit Type:	Renewal
Issue Date:	10/2/2014
Effective Date:	To be entered upon final issuance
Expiration Date:	To be entered upon final issuance
Superseded Permit Number:	

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

Cristal USA Inc., Ashtabula Complex Plant 2
2426 Middle Road
Ashtabula, OH 44004

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

Ohio EPA DAPC, Northeast District Office
2110 East Aurora Road
Twinsburg, OH 44087
(330)425-9171

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

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

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

(2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with 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, Northeast 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, Northeast 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, Northeast 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, Northeast 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 Requirements Under 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, Northeast 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, Northeast 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 Requirements Under 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, Northeast 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, Northeast 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, Northeast 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) None.

2. Voluntary limits on allowable CO and COS emissions, OAC rule 3745-31-05(F)

a) Applicable Emissions Limitations and/or Control Requirements

(1) Carbon monoxide (CO) emissions shall not exceed 81,930 tons, as a rolling, 12-month summation, from emissions units P001 and P006 located at Plant 1 (Fac ID 02 04 01 0200) and from emissions unit P002 located at Plant 2 (Fac ID 02 04 01 0193).

(2) Carbonyl sulfide (COS) emissions shall not exceed 3,909 tons, as a rolling, 12-month summation, from emissions units P001 and P006 located at Plant 1 (Fac ID 02 04 01 0200) and from emissions unit P002 located at Plant 2 (Fac ID 02 04 01 0193).

b) Monitoring and Recordkeeping

(1) The permittee shall monitor and record the following information for emissions units P001 and P006 located at Plant 1 (Fac ID 02 04 01 0200) and from emissions unit P002 located at Plant 2 (Fac ID 02 04 01 0193) monthly:

a. the actual emissions of CO from each emissions unit, in tons, as determined by testing as specified in paragraph 2.d) below;

b. the total emissions for CO from the emissions units specified above, as a rolling, 12-month summation;

c. the actual emissions of COS from each emissions unit, in tons, as determined by testing as specified in paragraph 2.d) below; and

d. the total emissions for COS from the emissions units specified above, as a rolling, 12-month summation.

[Authority for term: P0108818 and OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

(2) In the event the permittee elects to demonstrate compliance with the annual CO and COS emission limits in paragraph 2.a) above for each emissions unit by use of continuous emission rate monitoring system ("CERMS") in accordance with this paragraph and paragraph 2.d) below, each CO monitoring system and/or COS monitoring system shall be certified to meet the requirements of 40 CFR Part 60, Appendix B.

At least 45 days before commencing certification testing of each continuous monitoring system(s), the permittee shall develop and maintain a written quality assurance/quality control plan designed to ensure continuous valid and representative readings of CO and/or COS emissions from the continuous monitor(s), in units of the applicable standard(s). The plan shall follow the requirements of 40 CFR Part 60.13, and by reference 40 CFR Part 60, Appendix F.

Each continuous monitoring system quality assurance/quality control plan shall include the requirement to conduct daily zero/span checks, quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

[Authority for term: P0108818 and OAC rule 3745-77-07(C)(1)]

(3) Each continuous emission monitoring system relied upon for purposes of paragraph 2.b) consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

[Authority for term: P0108818 and OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

(4) Prior to the installation of a CO monitoring system and/or a COS monitoring system relied upon for purposes of paragraph 2.b), the permittee shall submit information detailing the proposed location of the sampling site in accordance with the siting requirements in 40 CFR Part 60, Appendix B.

[Authority for term: P0108818 and OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

(5) The permittee shall maintain records of data obtained by the continuous CO and/or COS monitoring system relied upon purposes of paragraph 2.b) including, but not limited to:

a. emissions of CO and/or COS in parts per million and stack flow rates in dry standard cubic feet per minute, on a one-hour average basis;

b. results of quarterly cylinder gas audits;

c. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

d. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

e. hours of operation of the emissions unit and the continuous CO and/or COS monitoring systems;

f. the date, time, and hours of operation of the emissions unit without the continuous CO and/or COS monitoring systems in operation;

g. the date, time, and hours of operation of the emissions unit during any malfunction of the continuous CO and/or COS monitoring system; as well as,

h. the reason (if known) and the corrective actions taken (if any) for each such event in (f) and (g).

[Authority for term: P0108818 and OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

c) Reporting

(1) The permittee shall submit quarterly reports to the Ohio EPA Northeast District Office, documenting all instances of CO and/or COS emissions in excess of the emission limits specified in paragraph 2.a) above. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in units of the applicable standard(s).

[Authority for term: P0108818 and OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

(2) These quarterly reports shall be submitted by January 31, April 30, July 31 and October 31 of each year and shall include the following:

a. the facility name and address;

b. the manufacturer and model number of each continuous emission and other associated monitors;

c. a description of any change in the equipment that comprises the CERMS, including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

d. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above;

e. the total operating time (hours) of the emissions unit;

f. the total operating time of each continuous monitoring system while the respective emissions unit was in operation;

g. results and dates of quarterly cylinder gas audits;

h. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s) (during appropriate quarter(s));

i. unless previously submitted, the results of any relative accuracy test audit showing each continuous monitor out-of-control and the compliant results following any corrective actions;

j. the date, time, and duration of any/each malfunction** of each continuous monitoring system, emissions unit, and/or control equipment;

k. the date, time, and duration of any downtime** of each continuous monitoring system and/or control equipment while the emissions unit was in operation; and

l. the reason (if known) and the corrective actions taken (if any) for each event in (c)(2)j and c)(2)k.

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the quarterly report

** each downtime and malfunction event shall be reported regardless if there is an exceedance of any applicable limit

[Authority for term: P0108818 and OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

(3) Facility-wide monthly CO and/or COS data shall be a sum of both Plant's valid hourly CO lb/hr and/or the valid hourly COS lb/hr data for the month divided by 2000 to convert to CO tons per month and/or COS tons per month. Compliance data shall be a sum of the most recent month's CERMS recorded CO tons per month and/or the COS tons per month, and the previous 11 month's CO tons per month and/or the COS tons per month.

For periods where any of the required CERMS are not recording valid data, or are recording data that are out-of-control, for the purposes of the facility-wide emissions limit the permittee shall calculate the CO tons and /or the COS tons of emissions from the associated Plant for that time period. Calculated data shall be added to valid data for that parameter for that Plant for the month, and added to the other Plant's valid CERMS data (or data calculated in the same manner if that Plant's CERMS data contain invalid or out-of-control periods also) in order to calculate monthly total CO tons and/or COS tons of emissions for the facility.

In order to calculate CO tons and/or COS tons of emissions when CERMS data are not available, the permittee shall use existing emission factor data in terms of CO tons per ton of $TiCl_4$ produced and/or COS tons per ton of $TiCl_4$ produced from each plant and multiply it by the $TiCl_4$ production data for that plant for the period of time that the CERMS data are not valid or are out-of-control. Calculated and measured emissions data for each parameter from each plant will be summed at the end of each month and used to determine compliance with the facility-wide emissions limit(s) as described above.

[Authority for term: OAC rules 3745-31-05(F) and 3745-77-07(C)(1)]

d) Testing

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

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

Carbon monoxide (CO) emissions shall not exceed 81,930 tons, as a rolling, 12-month summation, from emissions units P001 and P006 located at Plant 1 (Fac ID 02 04 01 0200) and from emissions unit P002 located at Plant 2 (Fac ID 02 04 01 0193).

Applicable Compliance Method:

Either calculations based on the actual production rates for the time period in question multiplied by the emission factors derived from the most recent Reference Method stack testing representative of actual emission unit operation, or continuous emission monitoring of CO in accordance with paragraph b) above.

b. Emission Limitation:

Carbonyl sulfide (COS) emissions shall not exceed 3,909 tons per year, as a rolling, 12-month summation, from emissions units P001 and P006 located at Plant 1 (Fac ID 02 04 01 0200) and from emissions unit P002 located at Plant 2 (Fac ID 02 04 01 0193).

Applicable Compliance Method:

Either calculations based on the actual production rates for the time period in question multiplied by the emission factors derived from the most recent Reference Method stack testing representative of actual emission unit operation, or continuous emission monitoring of COS in accordance with paragraph b) above.

(2) If a continuous CO and/or COS emissions monitor system is not installed and certified for the emissions unit, the permittee shall conduct, or have conducted, emission testing for emissions units P001 and P006 located at Plant 1 (Fac ID 02 04 01 0200) and for emissions unit P002 located at Plant 2 (Fac ID 02 04 01 0193) in accordance with the following requirements. The emission limit of 81,930 tons per year (2-year annual average) was derived from the 2 year average of emissions reported in the permittee's 2007 and 2008 fee emission reports. The emission factors (expressed as pounds of CO and COS per ton of Titanium Tetrachloride [$TiCl_4$] produced) derived from Reference Method stack tests at P001 in June 2004 and at P006 in January 2000, multiplied by actual annual production of $TiCl_4$ during 2007 and 2008, is the basis for the annual CO and COS emissions from units P001 and P006 at Plant 1 for the 2007 and 2008 fee emission reports. The emission factors (expressed as pounds of CO and COS per ton of Titanium Tetrachloride [$TiCl_4$] produced) derived from Reference Method stack tests at Plant 2 in November 2002, multiplied by the actual annual production of $TiCl_4$ during 2007 and 2008, is the basis for the annual CO and COS emissions from Plant 2 for the 2007 and 2008 fee emission reports. If a physical change or change in the method of operation, within the meaning of OAC rule 3745-31-01(JJJ), occurs that the permittee or Ohio EPA believes would increase the CO and/or COS emission factor at one or more emission units subject to the emission limits in paragraph 2.a)(1) and 2.a)(2) above the levels used for the 2007 and 2008 fee emission reports, emission testing to develop a new emission factor shall be conducted within 60 days of the change being implemented.

a. The following test method(s) shall be employed to establish emission factors (expressed as pounds of CO and COS per ton of Titanium Tetrachloride [$TiCl_4$] produced) to be multiplied by the 12-month rolling summation $TiCl_4$ production rates for the period in question, to demonstrate compliance with the allowable mass emission rate(s):

US EPA Reference Method 10 CO

US EPA Reference Method 15 COS.

US EPA Reference Methods 1-4 Stack Flow Rates

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

b. The test(s) shall be conducted while the emissions unit is operating at 90% of the maximum production rate or more, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

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

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

e. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 60 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

[Authority for term: P0108818 and OAC rule 3745-77-07(C)(1)]

(3) Within 60 days of the installation of a continuous CO and/or COS emissions rate monitoring system, the permittee shall conduct certification tests of the continuous CO and/or COS emissions monitoring system in units of the applicable standard(s), to demonstrate compliance with 40 CFR Part 60, Appendix B.

Personnel from the Ohio EPA Central Office and the Ohio EPA Northeast District Office shall be notified 30 days prior to initiation of the applicable tests and shall be permitted to examine equipment and witness the certification tests. Two copies of the test results shall be submitted to Ohio EPA, one copy to the Ohio EPA Northeast District Office and one copy to Ohio EPA Central Office and pursuant to OAC rule 3745-15-04, within 60 days after the test is completed.

Certification of the continuous CO and/or COS emissions rate monitoring system shall be granted upon determination by the Ohio EPA Central Office that the system meets the requirements of 40 CFR Part 60, Appendix B.

For the purposes of certification only, the following short term emission rates may be used as the allowable emission rate in any calculation, as appropriate:

Emissions Unit	CO (lbs/hr)	COS (lbs/hr)
P001 at Plant 1	6,248.68	315.46
P006 at Plant 1	15.89	1.69
P002 at Plant 2	15,273.20	710.59

Ongoing compliance with the CO and/or COS emission limits specified in paragraph 2.a) above shall be demonstrated through the data collected as required in the Monitoring and Record keeping, and Report requirements of paragraphs 2.b) and 2.c) above and the Testing requirements of this paragraph.

[Authority for term: P0108818 and OAC rule 3745-77-07(C)(1)]

3. Continuous Emission Rate Monitoring for SO_2

a) Additional Terms and Conditions

(1) The permittee shall maintain a written quality assurance/quality control plan for the continuous SO_2 monitoring system, designed to ensure continuous valid and representative readings of SO_2 emissions in units of the applicable standard(s). 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 continuous SO_2 monitoring system must be kept on site and available for inspection during regular office hours.

The plan shall include the requirement to conduct quarterly cylinder gas audits or relative accuracy audits as required in 40 CFR Part 60; and to conduct relative accuracy test audits in units of the standard(s), in accordance with and at the frequencies required per 40 CFR Part 60.

(2) The continuous emission monitoring system consists of all the equipment used to acquire data to provide a record of emissions and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data recording/processing hardware and software.

(3) The permittee may elect to use CEMS for the purposes of monitoring SO_2 on a ton per year basis.

b) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain on site, the document(s) of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous SO2 monitoring system has been certified to meet the requirements of 40 CFR Part 60, Appendix B, Performance Specifications 2 and 6. The letter(s)/document(s) of certification shall be made available to the Director (the Ohio EPA Northeast District Office) upon request.

[Authority for term: OAC rule 3745-77-07(C)(1), 40 CFR 60.13 and 40 CFR Part 60, Appendix B]

(2) The permittee shall operate and maintain equipment to continuously monitor and record SO_2 emissions from this emissions unit in units of the applicable standard(s). The continuous monitoring and recording equipment shall comply with the applicable requirements specified in 40 CFR Part 60.

The permittee shall maintain records of all data obtained by the continuous SO_2 monitoring system including, but not limited to:

a. emissions of SO_2 in parts per million for each cycle time of the analyzer, with no resolution less than one data point per minute required;

b. emissions of SO_2 in pounds per hour and the emissions of SO_2 in pounds per hour, as a rolling, three hour average;

c. results of quarterly cylinder gas audits;

d. results of daily zero/span calibration checks and the magnitude of manual calibration adjustments;

e. results of required relative accuracy test audit(s), including results in units of the applicable standard(s);

f. hours of operation of the emissions unit, continuous SO_2 monitoring system, and control equipment;

g. the date, time, and hours of operation of the emissions unit without the control equipment and/or the continuous SO_2 monitoring system;

h. the date, time, and hours of operation of the emissions unit during any malfunction of the control equipment and/or the continuous SO_2 monitoring system; as well as,

i. the reason (if known) and the corrective actions taken (if any) for each such event in (g) and (h).

All valid data points generated and recorded by the continuous emission monitoring and data acquisition and handling system may be used in the calculation of the pollutant concentration and/or emission rate over the appropriate averaging period.

[Authority for term: OAC rule 3745-77-07(C)(1), 40 CFR 60.13 and 40 CFR Part 60, Appendix B & F]

c) Reporting Requirements

(1) The permittee shall comply with the following quarterly reporting requirements for the emissions unit and its continuous SO_2 monitoring system:

a. Pursuant to the monitoring, record keeping, and reporting requirements for continuous monitoring systems contained in 40 CFR Parts 60.7 and 60.13(h) and the requirements established in this permit, the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA Northeast District Office, documenting all instances of SO_2 emissions in excess of any applicable limit specified in this permit, 40 CFR Part 60, OAC Chapter 3745-18, and any other applicable rules or regulations. The report shall document the date, commencement and completion times, duration, and magnitude of each exceedance, as well as the reason (if known) and the corrective actions taken (if any) for each exceedance. Excess emissions shall be reported in pounds per hour, as a rolling, three-hour average.

b. These quarterly reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall include the following:

i. the facility name and address;

ii. the manufacturer and model number of the continuous SO_2 and other associated monitors;

iii. a description of any change in the equipment that comprises the continuous emission rate monitoring system (CERMS), including any change to the hardware, changes to the software that may affect CEMS readings, and/or changes in the location of the CEMS sample probe;

iv. the excess emissions report (EER)*, i.e., a summary of any exceedances during the calendar quarter, as specified above;

v. the total SO_2 emissions for the calendar quarter (tons);

vi. the total operating time (hours) of the emissions unit;

vii. the total operating time of the continuous SO_2 monitoring system while the emissions unit was in operation;

viii. results and dates of quarterly cylinder gas audits;

ix. unless previously submitted, results and dates of the relative accuracy test audit(s), including results in units of the applicable standard(s), (during appropriate quarter(s));

x. unless previously submitted, the results of any relative accuracy test audit showing the continuous SO_2 monitor out-of-control and the compliant results following any corrective actions;

xi. the date, time, and duration of any/each malfunction** of the continuous SO_2 monitoring system, emissions unit, and/or control equipment;

xii. the date, time, and duration of any downtime** of the continuous SO_2 monitoring system and/or control equipment while the emissions unit was in operation; and

xiii. the reason (if known) and the corrective actions taken (if any) for each event in (b)(xi) and (xii).

* where no excess emissions have occurred or the continuous monitoring system(s) has/have not been inoperative, repaired, or adjusted during the calendar quarter, such information shall be documented in the EER quarterly report

** each downtime and malfunction event shall be reported regardless of whether there is an exceedance of any applicable limit

[Authority for term: OAC rule 3745-77-07(C)(1) and 40 CFR 60.7]

d) Testing Requirements

(1) Ongoing compliance with the SO_2 emission limitations contained in this permit, 40 CFR Part 60 and any other applicable standard(s) shall be demonstrated through the data collected as required in the Monitoring and Record keeping Section of this permit; and through demonstration of compliance with the quality assurance/quality control plan, which shall meet the testing and recertification requirements of 40 CFR Part 60.

[Authority for term: OAC rule 3745-77-07(C)(1), 40 CFR 60.13 and 40 CFR Part 60, Appendices B & F]

4. 40 CFR 52, Prevention of Significant Deterioration of Air Quality; OAC rule 3745-31-10 Associated with $TiCl_4$ Pourback

a) Operating Restrictions

(1) None

b) Monitoring and Recordkeeping

(1) For a period of 10 years following the commencement of $TiCl_4$ pourback, the permittee shall calculate and maintain a record of post-change actual annual emissions for SO_2 in tons per year, for emissions units P001 located at Plant 1 and P002 located at Plant 2.

If SO_2 emissions change as a result of $TiCl_4$ pourback in additional emissions units, the change in emissions unit shall also be calculated, recorded and reported.

The purpose of this record is to demonstrate that post-change emissions from these emissions units, combined, did not trigger major New Source Review (NSR) upon commencement of process changes. The permittee's engineering testing while evaluating $TiCl_4$ pourback indicated that SO_2 equaled or exceeded fifty (50) percent of the applicable NSR significance level, as defined in OAC rule 3745-31-01(MMMMM)(effective date 12/14/2007), for that pollutant when emissions are excluded from projected actual emissions for independent factors unrelated to the project.

[Authority for term: OAC rules 3745-31-10 and 3745-77-07(C)(1)]

c) Reporting

(1) For a period of 10 years upon commencement of process changes, the permittee shall submit a report if the actual annual emissions (after exclusion of emissions due to independent factors unrelated to the project including but not limited to sampling and/or measurement variability), in tons per year, from emissions units P001, and P002 at Plant 2 and any other emissions units involved in this process change exceed the baseline actual emissions [as documented and maintained in b)(1)] by a significant amount for that pollutant, as defined in OAC rule 3745-31-01(MMMMM), and if such emissions differ from the preconstruction projection as documented and maintained pursuant to OAC rule 3745-31-10(A)(1)(c). The report shall contain the following:

a. the name, address and telephone number of the major stationary source;

b. the actual annual emissions; and

c. any other information that the permittee wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).

The report shall be submitted within 60 days after the end of each year during which an exceedance occurs.

[Authority for term: OAC rules 3745-31-10 and 3745-77-07(C)(1)]

5. 40 CFR Part 63, Subpart DDDDD, Industrial, Commercial, and Institutional Boiler and Process Heater MACT

a) The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart DDDDD:

P001. The process heaters associated with this emissions unit are existing, affected sources under the final Boiler MACT rule with a compliance date of January 31, 2016.

b) The complete MACT requirements, including the MACT General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website http://ecfr.gpoaccess.gov/ or by contacting the Ohio EPA Northeast District Office.

[Authority for term: 40 CFR Part 63, Subpart DDDDD, and OAC rule 3745-77-07(C)(1)]

6. 40 CFR Part 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines MACT

a) The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart ZZZZ: P023, P024, P025, P026, P027, P028, P029, P031 and P032.

Emissions units P023, P024, P025, P026, P027, P028 and P031 are existing, natural gas-fired, emergency RICE less than 500 hp located at a major source for HAP with a compliance date of October 19, 2013.

Emissions unit P029 is an existing emergency CI RICE greater than 500 hp located at a major source for HAP that does not operate or is not contractually obligated to be available for more than 15 hours per calendar year for the purposes specified in § 63.6640(f)(2)(ii) and (iii) or that does not operate for the purpose specified in § 63.6640(f)(4)(ii) that has no applicable requirements according to 63.6590(b)(3)(iii), that must comply by June 15, 2007.

Emissions unit P032 is new emergency SI RICE less than 500 hp located at a major source for HAP that complies by complying with 40 CFR part 60 subpart JJJJ for spark ignition engines, according to 63.6590(c)(6), with a compliance date of January 18, 2008.

b) The complete MACT requirements, including the MACT General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website http://ecfr.gpoaccess.gov/ or by contacting the Ohio EPA Northeast District Office.

[Authority for term: 40 CFR Part 63, Subpart ZZZZ, and OAC rule 3745-77-07(C)(1)]

7. 40 CFR Part 60, Subpart JJJJ, Stationary Spark Ignition Internal Combustion Engines NSPS

a) The following emissions unit contained in this permit is subject to 40 CFR Part 60, Subpart JJJJ: P032.

Emissions unit P032 is an emergency SI RICE rated 34 hp installed after July 11, 2005 and manufactured after April 1, 2006.

b) The complete NSPS requirements, including the NSPS General Provisions, may be accessed via the internet from the Electronic Code of Federal Regulations (e-CFR) website http://ecfr.gpoaccess.gov/ or by contacting the Ohio EPA Northeast District Office.

[Authority for term: 40 CFR Part 60, Subpart JJJJ, and OAC rule 3745-77-07(C)(1)]

8. Insignificant Emissions Units

The following insignificant emissions units at this facility must comply with all applicable State and federal regulations, as well as any emissions 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, and 3745-21, and/or 40 CFR Part 60 or 63:

P009	Lime Storage Bin for lime neutralization process	OAC rule 3745-17-11 and OAC rule 3745-17-07
P010	Lime Storage Bin for lime neutralization process	OAC rule 3745-17-11 and OAC rule 3745-17-07
P014	Micronizer system - D Train	PTI 02-14921
P023	100kw (134 hp) natural gas-fired, back-up electric power generator 1 P2 North	PBR11989 40 CFR Part 63, Subpart ZZZZ
P024	100 kw (134 hp) natural gas-fired, back-up electric power generator 2 P2 South	PBR11993 40 CFR Part 63, Subpart ZZZZ
P025	135 kw (180 hp) natural gas-fired, back-up electric power generator 3 P2 North.	PBR11991 40 CFR Part 63, Subpart ZZZZ
P026	55 kw (74 hp) natural gas-fired, back-up electric power generator 4 P2 North.	PBR11992
P027	200 kw (260 hp) natural gas-fired, back-up electric power generator 5 P2 North.	PBR11990 40 CFR Part 63, Subpart ZZZZ
P028	12 kw (16 hp) natural gas-fired, back-up electric power generator P2 North.	40 CFR Part 63, Subpart ZZZZ
P029	600 kw Co-gen diesel-fired emergency generator - co-generation plant	PBR11988 40 CFR Part 63, Subpart ZZZZ
P030	Cure Burner at $TiCl_4$	P0108489
P031	12 kw (16 hp) natural gas-fired, back-up electric power generator 6	40 CFR Part 63, Subpart ZZZZ
P032	25 kw (34 hp) natural gas-fired, back-up electric power generator 7.	40 CFR Part 60, Subpart JJJJ 40 CFR Part 63, Subpart ZZZZ
P904	Micronizer system - A Train	PTI 02-14921
P905	Micronizer system - B Train	PTI 02-14921
P906	Micronizer system - C Train	PTI 02-18069
T014	15,600 gallon storage tank for toluene	PTI 02-7742

[Authority for term: OAC rule 3745-77-07(C)(1)]

C. Emissions Unit Terms and Conditions

1. B013, B014, B015 and B016, Natural Gas Fired Combustion Turbine Group

Operations, Property and/or Equipment Description:

B013	65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a Low NO_x combuster control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co ID combustion turbine with heat recovery boiler no. 2
B014	65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a Low NOx combuster control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co ID combustion turbine with heat recovery boiler no. 3
B015	65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a Low NO_x combuster control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co ID combustion turbine with heat recovery boiler no. 4
B016	65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a Low NO_x combuster control device and a 55.0 mmBtu/hr natural gas-fired duct heater/recovery boiler; Co ID combustion turbine with heat recovery boiler no. 5

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

(1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. 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 02-22027 (effective 9/11/2007)	Nitrogen oxides (NO_X) emissions shall not exceed 12.53 lbs/hr and 54.88 tpy. See b)(2)a and b)(2)b. Carbon monoxide (CO) emissions shall not exceed 12.70 lbs/hr and 55.63 tpy. See b)(2)c. Organic compound (OC) emissions shall not exceed 2.12 lbs/hr and 9.29 tpy. See b)(2)c. Particulate emissions (PE) shall not exceed 0.85 lb/hr and 3.71 tpy. See b)(2)e.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Sulfur dioxide (SO_2) emissions shall not exceed 0.86 lb/hr and 3.77 tpy. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and the fuel sulfur content requirements of 40 CFR Part 60, Subpart GG.
b.	OAC rule 3745-17-07(A)(1)	Visible PE from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by rule.
c.	OAC rule 3745-17-10(B)(1)	The PE rate from the duct heater shall not exceed 0.020 lb/mmBtu of actual heat input. See b)(2)e and b)(2)f.
d.	OAC rule 3745-17-11(B)(4)	The PE rate from the turbine shall not exceed 0.040 lb/mmBtu of actual heat input. See b)(2)e and b)(2)f.
e.	OAC rule 3745-18-06(F)	SO_2 emissions from the turbine shall not exceed 0.5 lb/mmBtu of actual heat input. See b)(2)d.
f.	40 CFR Part 60, Subpart Dc	See b)(2)g.
g.	40 CFR Part 60, Subpart GG (60.330-335) [In accordance with 40 CFR 60.330 and 60.331, the turbines are affected stationary combined cycle gas turbines greater than 10 mmBtu/hr but less than 100 mmBtu/hr.]	NO_X emissions from the turbine shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis See b)(2)d and b)(2)h. The sulfur content of natural gas burned in the turbine shall not exceed 0.8 percent, by weight.
h.	40 CFR Part 63, Subpart YYYY (63.6080 – 6160) [In accordance with 40 CFR 63. 6090(a)(1), the turbines are existing stationary combustion turbines located at a major source of HAP because they were installed prior to January 14, 2003.]	Existing stationary combustion turbines located at a major source of HAP are not subject to the formaldehyde concentration exhaust gas limitation(s) within 40 CFR 63.6100.
i.	OAC rule 3745-31-05(D) PTI 02-22027 (effective 9/11/2007)	The total annual emissions of NO_X and CO from emissions units B013 through B017, combined, shall not exceed 212.91 tons

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	federally enforceable restrictions to avoid PSD requirements.	and 221.17 tons, respectively. These annual NO_x and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned to a cumulative total volume of 4,064 million cubic feet based on a rolling, 12-month summation.

(2) Additional Terms and Conditions

a. The combustion turbine shall be equipped with a dry, low NO_X emissions combustion system, a low NO_X steam injection system or an equivalent, alternate NO_X emissions control technology.

b. The allowable rate of 12.53 lbs/hour for NO_X emissions is based on manufacturer's performance guarantees and is established to reflect the potential to emit for this emissions unit.

c. The allowable rates of 12.70 lbs/hour for CO emissions and 2.12 lbs/hour OC emissions are based on manufacturer's performance guarantees and are established to reflect the potential to emit for this emissions unit.

d. The emissions limitation(s) specified by this rule is less stringent than the emissions limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

e. Per OAC rule 3745-17-10(B), the PE rate from the duct heater portion of this combined cycle unit shall not exceed 0.020 lb/mmBtu. Since the duct burner cannot be operated independently of the combustion turbine, the weighted average particulate emissions from this combined cycle emissions unit, when operating at 100 percent load (with total combined cycle heat input of 120.1 mmBtu/hr actual heat input measured at 0^0 F) shall not exceed 0.0308 lb/mmBtu of actual heat input; this is equivalent to an hourly emissions rate of 3.70 pounds at 0^0 Fahrenheit.

f. These PE rate limitations are equal to or less stringent than the corresponding limitation(s) specified in b)(2)e.

g. The duct heater is exempted from the SO_2 emissions limits and from the PE limits referenced in 40 CFR Part 60.42c and in 40 CFR Part 60.43c, respectively, as long as this steam generation unit burns only natural gas as a fuel.

h. The fuel-bound nitrogen content will be assumed to be zero as long as natural gas fuel is employed in the turbine. Therefore the permittee is exempt from the nitrogen content monitoring of the fuel specified in 40 CFR 60.334(h)(2).

c) Operational Restrictions

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

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI 02-22027]

(2) Emissions units B013 through B017 have been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of the natural gas fuel usage rate, upon issuance of this permit. The maximum quantity of natural gas fuel which may be burned in emissions units B013 through B017 shall not exceed 4,064 million cubic feet per year based on a rolling 12-month summation of fuel usage.

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI 02-22027]

(3) In accordance with 40 CFR Part 60.333(b), the fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

[Authority for term: OAC rule 3745-77-07(A)(1), PTI 02-22027 and 40 CFR 60.333]

(4) The HRSG steam output shall be maintained at or below 77.2 kpph as an hourly average.

The limit on the HRSG steam output is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted limit based upon information obtained during future performance tests that demonstrate compliance with the emission standards at a greater steam output for this/these emissions unit(s). In addition, approved revisions to limit will not constitute a relaxation of the permit requirements of this permit and may be incorporated into this permit by means of a minor modification.

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

d) Monitoring and/or Recordkeeping Requirements

(1) In accordance with 40 CFR 60.334(h), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas fuel being fired in the turbine in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. In accordance with 40 CFR 60.334(h)(1), analysis for total sulfur content of the natural gas fuel shall be conducted using the methods described in 40 CFR 60.335(b)(10)(ii). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084-82, 94, D5504-01, D6228-98, or Gas Processors Association Standard 2377-86 (all of which are incorporated by reference-see 40 CFR 60.17), which measure the major sulfur compound may be used.

c. In accordance with 40 CFR 60.334(h)(3), notwithstanding the provisions of 40 CFR 60.334(h)(1), the permittee may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u), regardless of whether an existing custom schedule approved by the U.S. EPA administrator for 40 CFR Part 60 subpart GG requires such monitoring. The permittee shall use one of the following sources of information to make the required demonstration:

i. the gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contact for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or

ii. representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20.0 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1.4 or 2.3.2.4 of appendix D to part 75 of 40 CFR.

d. In accordance with 40 CFR 60.334(h)(4), for any turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and for which a custom fuel monitoring schedule has been approved, the owner or operator may, without submitting a special petition to the U.S. EPA administrator, continue monitoring on this schedule. During the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring was performed twice per month. The monitoring data showed little variability in the fuel sulfur content, and indicated consistent compliance with 40 CFR 60.333, so that sampling and analysis for fuel sulfur content shall continue to be conducted once per quarter.

Authority for term: [OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(3) The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on both the combustion turbine and the duct heater portions of this emissions unit to allow for accurate determination of the fuel consumption of each portion of this combined cycle unit.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

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

a. the volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);

c. the volume of natural gas burned for the rolling, 12-month summation period for emissions units B013 through B017 collectively;

d. the number of hours of operation of this emissions unit for each calendar month;

e. the collective number of hours of operation of emissions units B013 through B017;

f. an estimate of the NO_X and CO emissions, in tons/month, from this emissions unit based on the compliance methods listed in sections f)(1)f and f)(1)g, respectively, or upon emissions factors developed from the most recent performance/emissions compliance test data; and

g. an estimate of the NO_X and CO emissions, in tons/month, from emissions units B013 through B017, collectively.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(5) The permittee shall maintain daily records of the following information for this emissions unit:

a. Except as provided in 40 CFR 60.334(b) on any day when a low NO_X steam injection system or another similar fluid injection NO_X emissions control technology is employed at the combustion turbine, the permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine. The permittee shall collect and record the following information each day:

i. the fuel consumption, in cubic feet on an hourly basis;

ii. the water or steam injection volume, in lbs/hr;

iii. the hourly ratio of water or steam to fuel;

iv. if applicable, other operating parameter(s) identified in an on-site parameter monitoring plan, required by 40 CFR 60.334(g); and

v. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

b. The permittee shall collect and record the HRSG steam output in kpph as an hourly average.

c. In accordance with 40 CFR 60.334(b) for any stationary gas turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and which uses water or steam injection to control NO_X emissions may, as an alternative to operating the continuous fuel and steam(water) monitoring system described in 40 CFR 60.334(a), the permittee shall install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO_X and O_2 monitors. As an

alternative, a CO_2 monitor may be used to adjust the measured NO_X concentrations to 15 percent O_2 by either converting the CO_2 hourly averages to equivalent O_2 concentrations using Equation F–14a or F–14b in appendix F of 40 CFR Part 75 and making the adjustments to 15 percent O_2, or by using the CO_2 readings directly to make the adjustments, as described in Method 20. If the option to use a CEMS is chosen, the CEMS shall be installed, certified, maintained and operated as follows:

i. Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO_X and diluent monitors may be performed individually or on a combined basis, *i.e.*, the relative accuracy tests of the CEMS may be performed either:

   (a) on a ppm basis (for NO_X) and a percent O_2 basis for oxygen; or

   (b) on a ppm at 15 percent O_2 basis; or

   (c) on a ppm basis (for NO_X) and a percent CO_2 basis (for a CO_2 monitor that uses the procedures in Method 20 to correct the NO_X data to 15 percent O_2).

ii. As specified in 40 CFR 60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

iii. For purposes of identifying excess emissions, CEMS data must be reduced to hourly averages as specified in 40 CFR 60.13(h).

   (a) For each unit operating hour in which a valid hourly average, as described in 40 CFR 60.334(b)(2), is obtained for both NO_X and diluent, the data acquisition and handling system must calculate and record the hourly NO_X emissions in the units of the applicable NO_X emission standard under 40 CFR 60.332(a), *i.e.*, percent NO_X by volume, dry basis, corrected to 15 percent O_2 and International Organization for Standardization (ISO) standard conditions (if required as given in 40 CFR 60.335(b)(1)). For any hour in which the hourly average O_2 concentration exceeds 19.0 percent O_2, a diluent cap value of 19.0 percent O_2 may be used in the emission calculations.

(b) A worst case ISO correction factor may be calculated and applied using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air (Ho), minimum ambient temperature (T_a), and minimum combustor inlet absolute pressure (P_o) into the ISO correction equation.

(c) If the owner or operator has installed a NO_X CEMS to meet the requirements of 40 CFR Part 75, and is continuing to meet the ongoing requirements of 40 CFR Part 75, the CEMS may be used to meet the requirements of this section, except that the missing data substitution methodology provided for at 40 CFR Part 75, subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in 40 CFR 60.7(c).

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

e) Reporting Requirements

(1) The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year. No deviation report, regarding sulfur content deviations, is required if the fuel is exempted from sulfur content analysis because it has been demonstrated the it meets the definition of a natural gas as defined in 40 CFR 60.331(u).

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.331]

(2) The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(4) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation for emissions units B013-B017.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(5) Permittee shall submit an annual report that summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(6) The permittee shall submit annual reports that specify the total NO_X emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(7) For any period when a low NO_X steam injection system or another similar fluid injection NO_X emissions control technology is employed at the combustion turbine, excess emissions reports shall be submitted in accordance with 40 CFR 60.334(j). An excess emission shall be any unit operating hour for which the average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water fuel ratio needed to demonstrate compliance with the NO_X emissions standard in 40 CFR 60.332, as established during the performance test required in 40 CFR 60.8. Any unit operating hour in which no water or steam is injected into the turbine shall also be considered an excess emission.

The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the operating parameter(s) does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the emissions unit. The quarterly report shall include the following information:

a. date(s) and time(s) of parameter deviation;

b. average steam or water-to-fuel ratio;

c. average fuel consumption, in cubic feet;

d. ambient conditions (temperature in Fahrenheit or Celsius, pressure in inches of mercury, and humidity in percent); and

e. gas turbine load, in kilowatts.

The ambient conditions do not need to be reported if the permittee opts to use the worst case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii), or if the ISO correction equation under the provisions of 40 CFR 60.335(b)(1) are employed.

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

(8) For any period when a low NO_X steam injection system or another similar fluid injection NO_X emissions control technology is employed at the combustion turbine, monitor downtime reports shall be submitted in accordance with 40 CFR 60.334(j). A period of monitor downtime shall be any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of monitor downtime and shall include the following information:

a. date(s) and time(s) of monitor downtime(s);

b. average steam or water-to-fuel ratio, if available;

c. average fuel consumption, in cubic feet;

d. ambient conditions (temperature in Fahrenheit or Celsius, pressure in inches of mercury, and humidity in percent); and

e. gas turbine load, in kilowatts.

The ambient conditions do not need to be reported if the permittee opts to use the worst case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii), or if the ISO correction equation under the provisions of 40 CFR 60.335(b)(1) are employed.

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

(9) The permittee shall submit quarterly deviation (excursion) reports that identify each recorded reading during the operation of the HRSG that the steam output was not maintained at or below the level specified in c)(4).

[Authority for term: OAC rule 3745-77-07(C)(1)]

(10) The permittee shall submit a notification report 30 days prior to any conversion from a low NO_X steam injection emissions control technology to another NO_X emissions control technology.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

f) Testing Requirements

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

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

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

<u>Applicable Compliance Method</u>:

If required, compliance shall be determined through visible particulate 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).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

b. Emission Limitation:

PE shall not exceed 0.85 lb/hr and 3.71 tpy.

Applicable Compliance Method:

Compliance with these emission limitations may be determined in the following manner:

i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.0066 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Section 3.1, Table 3.1-2a (4/00) to determine an hourly emissions value.

ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 7.6 lbs/million cubic feet of fuel burned, as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Section 1.4, Table 1.4-1 & 2 (7/98) (for industrial boilers of less than 100 mmBtu/hr heat input capacity) divided by 1000 Btu/cubic foot (for the calorific value of natural gas), to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit.

Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the summation of the monthly hours of operation as required by d)(4).

If required pursuant to OAC rule 3745-15-04, the permittee shall demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1 through 5.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

c. Fuel Sulfur Content Limitation:

The sulfur content of natural gas burned in the turbine shall not exceed 0.8 percent, by weight.

Applicable Compliance Method:

Compliance with the fuel sulfur content limitation shall be determined in accordance with the procedures specified in 40 CFR 60.334(h)(1) or 40 CFR

60.334(h)(3) as is required in d)(1). If the applicable ranges of some compliance methods in the aforementioned rules are not adequate to measure the levels of sulfur in the gaseous fuel, dilution of samples before analysis (with verification of the dilution ratio) may be conducted, with prior approval from the U.S. EPA Administrator.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

d. Emission Limitations:

SO_2 emissions shall not exceed 0.86 lb/hr and 3.77 tpy.

Applicable Compliance Method:

Compliance with these emissions limitations may be determined in the following manner:

For the entire emissions unit, multiply the maximum rated heat input capacity of 120.1 mmBtu/hr by an emissions factor of 0.0072 lb/mmBtu, as specified in the application for this permit, to determine an hourly emissions value. After the installation of a steam injection or other equivalent NO_X control technology, performance tests shall be conducted to demonstrate compliance with the hourly SO_2 emissions limit.

Compliance with the annual emissions limitation shall be determined by applying the measured hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

e. Emission Limitations:

OC emissions shall not exceed 2.12 lbs/hr and 9.29 tpy.

Applicable Compliance Method:

Compliance with these emissions limitations may be determined in the following manner:

i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.0263 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.

ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an

emissions factor 0.0075 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit.

Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

If required, the permittee shall demonstrate compliance with this emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18, 25 or 25A as appropriate.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

f. Emission Limitations:

NO_X emissions shall not exceed 12.53 lbs/hr and 54.88 tpy.

Applicable Compliance Method:

Compliance with these emissions limitations may be determined in the following manner:

i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NO_x control system to determine an hourly emissions value.

ii. For the duct heater portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 0.10 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the installation of a steam injection or other equivalent NO_X control technology, performance tests shall be conducted to demonstrate compliance with the hourly NO_X emissions limit.

Compliance with the annual emissions limitation shall be determined by applying the measured hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

g. Emission Limitations:

CO emissions shall not exceed 12.70 lbs/hr and 55.63 tpy.

Applicable Compliance Method:

Compliance with these emission limitations may be determined in the following manner:

i. For the combustion turbine portion of this emissions unit, multiply the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.1316 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions value.

ii. For the duct heater portion of this emissions unit, multiply the maximum hourly fuel usage, as determined using the maximum rated heat input capacity of the emissions unit (55.0 mmBtu/hr) by an emissions factor of 0.0750 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions value.

The calculated hourly emissions for the combustion turbine component should then be added to the calculated emissions for the duct heater component of this emissions unit to determine the compliance value for the entire emissions unit. After the installation of a steam injection or other equivalent NO_X control technology, performance tests shall be conducted to demonstrate compliance with the hourly CO emissions limit.

Compliance with the annual emissions limitation shall be determined by applying the measured hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

h. Emission Limitations:

The total annual emissions of NO_X and CO from emissions units B013 through B017, combined, shall not exceed 212.91 tons and 221.17 tons, respectively.

Applicable Compliance Method:

Compliance with the annual emission limitations for B013 through B017, combined, shall be determined by the summation of monthly emissions from emissions units B013 through B017 collectively, as required by d)(4).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

g) Miscellaneous Requirements

(1) None.

2. B017, Natural Gas Fired Combustion Turbine

Operations, Property and/or Equipment Description:

65.1 mmBtu/hr (4.92 MW) natural gas-fired combustion turbine with a low NO_x combustor control device and a heat recovery steam generator; Co ID combustion turbine no. 1

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 02-22027 Effective 9/11/2007)	Nitrogen oxides (NO_X) emissions shall not exceed 7.03 lbs/hr and 30.79 tpy. See b)(2)a and b)(2)b. Carbon monoxide (CO) emissions shall not exceed 8.57 lbs/hr and 37.54 tpy. See b)(2)c. Organic compound (OC) emissions shall not exceed 1.71 lbs/hr and 7.49 tpy. See b)(2)c. Particulate emissions (PE) shall not exceed 0.43 lb/hr and 1.88 tpy. Sulfur dioxide (SO_2) emissions shall not exceed 0.46 lb/hr and 2.01 tpy. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A) and the fuel sulfur content requirements of 40 CFR Part 60, Subpart GG.
b.	OAC rule 3745-17-07(A)(1)	Visible PE from the exhaust stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-11(B)(4)	The PE rate from the turbine shall not exceed 0.040 pound per million Btu of actual heat input. See b)(2)d.
d.	OAC rule 3745-18-06(F)	SO_2 emissions from the turbine shall not exceed 0.5 lb/mmBtu of actual heat input. See b)(2)d.
e.	40 CFR Part 60, Subpart GG (60.330-335) [In accordance with 40 CFR 60.330 and 60.331, the turbine is an affected stationary combined cycle gas turbine greater than 10 mmBtu/hr but less than 100 mmBtu/hr.]	NO_X emissions from the turbine shall not exceed 190.0 parts per million, by volume (ppmv), at 15% oxygen, on a dry basis. See b)(2)d and b)(2)e. The sulfur content of natural gas burned in the turbine shall not exceed 0.8 percent, by weight.
f.	40 CFR Part 63, Subpart YYYY (63.6080 – 6160) [In accordance with 40 CFR 63. 6090(a)(1), the turbine is an existing stationary combustion turbine located at a major source of HAP installed prior to January 14, 2003.]	Existing stationary combustion turbines located at a major source of HAP are not subject to the formaldehyde concentration exhaust gas limitation(s) within 40 CFR 63.6100.
g.	OAC rule 3745-31-05(D) - federally enforceable restrictions to avoid PSD requirements.	The total annual emissions of NO_X and CO from emissions units B013 through B017, combined, shall not exceed 212.91 tons and 221.17 tons, respectively. These annual NO_x and CO emissions limitations shall be achieved by restricting the maximum quantity of natural gas burned to a cumulative total volume of 4,064 million cubic feet based on a rolling, 12-month summation.

(2) Additional Terms and Conditions

a. The combustion turbine shall be equipped with a dry, low NO_X emissions combustion system, a low NO_X steam injection system or an equivalent, alternate NO_X emissions control technology.

b. The allowable rate of 7.03 lbs/hour for NO_X emissions is based on manufacturer's performance guarantees and is established to reflect the potential to emit for this emissions unit.

c. The allowable rates of 8.57 lbs/hour for CO emissions and 0.46 lbs/hour OC emissions are based on manufacturer's performance guarantees and are established to reflect the potential to emit for this emissions unit.

d. The emissions limitation(s) specified by this rule is less stringent than the emissions limitation(s) established pursuant to OAC rule 3745-31-05(A)(3).

e. The fuel-bound nitrogen content will be assumed to be zero as long as natural gas fuel is employed in the turbine. Therefore the permittee is exempt from the nitrogen content monitoring of the fuel specified in 40 CFR 60.334(h)(2).

c) Operational Restrictions

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

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI 02-22027]

(2) Emissions units B013 through B017 have been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of the natural gas fuel usage rate, upon issuance of this permit. The maximum quantity of natural gas fuel which may be burned in emissions units B013 through B017, combined, shall not exceed 4,064 million cubic feet per year based on a rolling, 12-month summation of fuel usage.

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI 02-22027]

(3) In accordance with 40 CFR Part 60.333(b), the fuel burned in this emissions unit shall not contain sulfur in excess of 0.8%, by weight.

[Authority for term: OAC rule 3745-77-07(A)(1), PTI 02-22027 and 40 CFR 60.333]

d) Monitoring and/or Recordkeeping Requirements

(1) In accordance with 40 CFR 60.334(h), the permittee shall analyze and maintain records of the fuel-bound sulfur content of the natural gas fuel in the following manner:

a. Monitoring of the sulfur content shall be performed by either the facility, a service contractor retained by the facility, or the fuel supplier.

b. In accordance with 40 CFR 60.334(h)(1), analysis for total sulfur content of the natural gas fuel shall be conducted using the methods described in 40 CFR 60.335(b)(10)(ii). Alternatively, if the total sulfur content of the gaseous fuel during the most recent performance test was less than 0.4 weight percent (4000 ppmw), ASTM D4084-82, 94, D5504-01, D6228-98, or Gas Processors Association Standard 2377-86 (all of which are incorporated by reference-see 40 CFR 60.17), which measure the major sulfur compound may be used.

c. In accordance with 40 CFR 60.334(h)(3), notwithstanding the provisions of 40 CFR 60.334(h)(1), the permittee may elect not to monitor the total sulfur content of the gaseous fuel combusted in the turbine, if the gaseous fuel is demonstrated to meet the definition of natural gas in 40 CFR 60.331(u), regardless of whether

an existing custom schedule approved by the U.S. EPA administrator for 40 CFR Part 60 subpart GG requires such monitoring. The permittee shall use one of the following sources of information to make the required demonstration:

i. the gas quality characteristics in a current, valid purchase contract, tariff sheet or transportation contact for the gaseous fuel, specifying that the maximum total sulfur content of the fuel is 20.0 grains/100 scf or less; or

ii. representative fuel sampling data which show that the sulfur content of the gaseous fuel does not exceed 20.0 grains/100 scf. At a minimum, the amount of fuel sampling data specified in section 2.3.1..4 or 2.3.2.4 of appendix D to part 75 of 40 CFR.

d. In accordance with 40 CFR 60.334(h)(4), for any turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and for which a custom fuel monitoring schedule has been approved, the owner or operator may, without submitting a special petition to the U.S. EPA administrator, continue monitoring on this schedule. During the first six (6) months of operation of this emissions unit, fuel sulfur content monitoring was performed twice per month. The monitoring data showed little variability in the fuel sulfur content, and indicated consistent compliance with 40 CFR 60.333, so that sampling and analysis for fuel sulfur content shall be continue to be conducted once per quarter.

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(3) The permittee shall install, maintain, and operate a properly calibrated natural gas flow rate meter on this emissions unit to allow for accurate determination of the fuel consumption of this combustion turbine.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

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

a. the volume of natural gas burned in this emissions unit for the calendar month (in millions of cubic feet);

b. the volume of natural gas burned in emissions units B013 through B017 collectively during the month (in millions of cubic feet);

c. the volume of natural gas burned for the rolling, 12-month summation period for emissions units B013 through B017 collectively;

d. the number of hours of operation of this emissions unit for each calendar month;

e. the collective number of hours of operation of emissions units B013 through B017;

f. an estimate of the NO_X and CO emissions, in tons/month, from this emissions unit based on the compliance methods listed in f)(1)f and f)(1)g, respectively, or upon emissions factors developed from the most recent performance/emissions compliance test data; and

g. an estimate of the NO_X and CO emissions, in tons/month, from emissions units B013 through B017, collectively.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(5) The permittee shall maintain daily records of the following information for this emissions unit:

a. Except as provided in 40 CFR 60.334(b) on any day when a low NO_X steam injection system or another similar fluid injection NO_X emissions control technology is employed at the combustion turbine, the permittee shall install, calibrate, maintain and operate a continuous monitoring system to monitor and record the fuel consumption and the ratio of water or steam to fuel being fired in the turbine. The permittee shall collect and record the following information each day:

i. the fuel consumption, in cubic feet on an hourly basis;

ii. the water or steam injection volume, in lbs/hr

iii. the hourly ratio of water or steam to fuel;

iv. if applicable, other operating parameter(s) identified in an on-site parameter monitoring plan, required by 40 CFR 60.334(g); and

v. the operating times for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

b. In accordance with 40 CFR 60.334(b) for any stationary gas turbine that commenced construction, reconstruction or modification after October 3, 1977, but before July 8, 2004, and which uses water or steam injection to control NO_X emissions may, as an alternative to operating the continuous fuel and steam(water) monitoring system described in 40 CFR 60.334(a), the permittee shall install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) consisting of NO_X and O_2 monitors. As an alternative, a CO_2 monitor may be used to adjust the measured NO_X concentrations to 15 percent O_2 by either converting the CO_2 hourly averages to equivalent O_2 concentrations using Equation F–14a or F–14b in appendix F of

40 CFR Part 75 and making the adjustments to 15 percent O_2, or by using the CO_2 readings directly to make the adjustments, as described in Method 20. If the option to use a CEMS is chosen, the CEMS shall be installed, certified, maintained and operated as follows:

i. Each CEMS must be installed and certified according to PS 2 and 3 (for diluent) of 40 CFR part 60, appendix B, except the 7-day calibration drift is based on unit operating days, not calendar days. Appendix F, Procedure 1 is not required. The relative accuracy test audit (RATA) of the NO_X and diluent monitors may be performed individually or on a combined basis, *i.e.*, the relative accuracy tests of the CEMS may be performed either:

(a) on a ppm basis (for NO_X) and a percent O_2 basis for oxygen; or

(b) on a ppm at 15 percent O_2 basis; or

(c) on a ppm basis (for NO_X) and a percent CO_2 basis (for a CO_2 monitor that uses the procedures in Method 20 to correct the NO_X data to 15 percent O_2).

ii. As specified in 40 CFR 60.13(e)(2), during each full unit operating hour, each monitor must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour, to validate the hour. For partial unit operating hours, at least one valid data point must be obtained for each quadrant of the hour in which the unit operates. For unit operating hours in which required quality assurance and maintenance activities are performed on the CEMS, a minimum of two valid data points (one in each of two quadrants) are required to validate the hour.

iii. For purposes of identifying excess emissions, CEMS data must be reduced to hourly averages as specified in 40 CFR 60.13(h).

(a) For each unit operating hour in which a valid hourly average, as described in 40 CFR 60.334(b)(2), is obtained for both NO_X and diluent, the data acquisition and handling system must calculate and record the hourly NO_X emissions in the units of the applicable NO_X emission standard under 40 CFR 60.332(a), *i.e.*, percent NO_X by volume, dry basis, corrected to 15 percent O_2 and International Organization for Standardization (ISO) standard conditions (if required as given in 40 CFR 60.335(b)(1)). For any hour in which the hourly average O_2 concentration exceeds 19.0 percent O_2, a diluent cap value of 19.0 percent O_2 may be used in the emission calculations.

(b) A worst case ISO correction factor may be calculated and applied using historical ambient data. For the purpose of this calculation, substitute the maximum humidity of ambient air (Ho), minimum

ambient temperature (T_a), and minimum combustor inlet absolute pressure (P_o) into the ISO correction equation.

(c) If the owner or operator has installed a NO_X CEMS to meet the requirements of 40 CFR Part 75, and is continuing to meet the ongoing requirements of 40 CFR Part 75, the CEMS may be used to meet the requirements of this section, except that the missing data substitution methodology provided for at 40 CFR Part 75, subpart D, is not required for purposes of identifying excess emissions. Instead, periods of missing CEMS data are to be reported as monitor downtime in the excess emissions and monitoring performance report required in 40 CFR 60.7(c).

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

e) Reporting Requirements

(1) The permittee shall submit annual deviation reports that identify all periods during which the sulfur content of the fuel fired in this emissions unit exceeded 0.8%, by weight. These reports shall be submitted by January 31 of each year. No deviation report, regarding sulfur content deviations, is required if the fuel is exempted from sulfur content analysis because it has been demonstrated the it meets the definition of a natural gas as defined in 40 CFR 60.331(u).

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.331]

(2) The permittee shall submit deviation (excursion) reports that identify all periods during which the emissions limitations listed above in these terms and conditions were exceeded or the required records were not maintained. Such report shall be sent to the Northeast District Office within 30 days following the end of the calendar month during which the exceedance or deviation occurred.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(4) The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the rolling, 12-month natural gas usage limitation for emissions units B013-B017.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(5) Permittee shall submit an annual report that summarizes the monthly and cumulative annual hours of operation of this emissions unit. This report shall be submitted to the Northeast District Office of the Ohio EPA by January 31 of each year for data recorded during the previous calendar year.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(6) The permittee shall also submit annual reports that specify the total NO_X emissions and total CO emissions (in tons per year) from this emissions unit for the previous calendar year. These reports shall be submitted by January 31 of each year.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

(7) For any period when a low NO_X steam injection system or another similar fluid injection NO_X emissions control technology is employed at the combustion turbine, excess emissions reports shall be submitted in accordance with 40 CFR 60.334(j). An excess emission shall be any unit operating hour for which the average steam or water to fuel ratio, as measured by the continuous monitoring system, falls below the acceptable steam or water fuel ration needed to demonstrate compliance with the NO_X emissions standard in 40 CFR 60.332, as established during the performance test required in 40 CFR 60.8. Any unit operating hour in which no water or steam is injected into the turbine shall also be considered an excess emission.

The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the operating parameter(s) does not achieve the target value or is outside the acceptable range defined in the parameter monitoring plan for the emissions unit. The quarterly report shall include the following information:

a. date(s) and time(s) of parameter deviation;

b. average steam or water-to-fuel ratio;

c. average fuel consumption, in cubic feet;

d. ambient conditions (temperature in Fahrenheit or Celsius, pressure in inches of mercury, and humidity in percent); and

e. gas turbine load, in kilowatts.

The ambient conditions do not need to be reported if the permittee opts to use the worst case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii), or if the ISO correction equation under the provisions of 40 CFR 60.335(b)(1) are employed.

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

(8) For any period when a low NO_X steam injection system or another similar fluid injection NO_X emissions control technology is employed at the combustion turbine, monitor downtime reports shall be submitted in accordance with 40 CFR 60.334(j). A period of monitor downtime shall be any unit operating hour in which water or steam is injected into the turbine, but the essential parametric data needed to determine the steam or water to fuel ratio are unavailable or invalid.

The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of monitor downtime and shall include the following information:

a. date(s) and time(s) of monitor downtime(s);

b. average steam or water-to-fuel ratio, if available;

c. average fuel consumption, in cubic feet;

d. ambient conditions (temperature in Fahrenheit or Celsius, pressure in inches of mercury and humidity in percent); and

e. gas turbine load, in kilowatts.

The ambient conditions do not need to be reported if the permittee opts to use the worst case ISO correction factor as specified in 40 CFR 60.334(b)(3)(ii), or if the ISO correction equation under the provisions of 40 CFR 60.335(b)(1) are employed.

[Authority for term: OAC rule 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

(9) The permittee shall submit a notification report 30 days prior to any conversion from a low NO_X steam injection emissions control technology to another NO_X emissions control technology.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-22027]

f) Testing Requirements

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

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

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

<u>Applicable Compliance Method</u>:

If required, compliance shall be determined through visible particulate 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).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

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

PE shall not exceed 0.43 lb/hr and 1.88 tpy.

Applicable Compliance Method:

Compliance with these emission limitations may be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.0066 lbs/mmBtu as specified in USEPA reference document AP-42, Fifth Edition, Compilation of Air Pollutant Emission Factors, Section 3.1, Table 3.1-2a (4/00) to determine an hourly emissions value.

Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the summation of the monthly hours of operation as required by d)(4).

If required pursuant to OAC rule 3745-15-04, the permittee shall demonstrate compliance with the particulate emissions limits of this permit by means of physical testing of the effluent from this emissions unit in accordance with testing procedures listed in 40 CFR Part 60, Appendix A, Methods 1 through 5.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

c. Fuel Sulfur Content Limitation:

The sulfur content of natural gas burned in the turbine shall not exceed 0.8 percent, by weight.

Applicable Compliance Method:

Compliance with the fuel sulfur content limitation shall be determined in accordance with the procedures specified in 40 CFR 60.334(h)(1) or 40 CFR 60.334(h)(3) as is required in d)(1). If the applicable ranges of some compliance methods in the aforementioned rules are not adequate to measure the levels of sulfur in the gaseous fuel, dilution of samples before analysis (with verification of the dilution ratio) may be conducted, with prior approval from the U.S. EPA Administrator.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1), PTI 02-22027 and 40 CFR 60.334]

d. Emission Limitations:

SO_2 emissions shall not exceed 0.46 lb/hr and 2.01 tpy.

Applicable Compliance Method:

Compliance with these emissions limitations may be determined in the following manner:

For the entire emissions unit, multiply the maximum rated heat input capacity of 65.1 mmBtu/hr by an emissions factor of 0.0072 lb/mmBtu, as specified in the application for this permit, to determine an hourly emissions value. After the

installation of a steam injection or other equivalent NO_X control technology, performance tests shall be conducted to demonstrate compliance with the hourly SO_2 emissions limit.

Compliance with the annual emissions limitation shall be determined by applying the measured hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

e. Emission Limitations:

OC emissions shall not exceed 1.71 lbs/hr and 7.49 tpy.

Applicable Compliance Method:

Compliance with these emissions limitations may be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.0263 lb/mmBtu (per manufacturer's emissions test data supplied by applicant) to determine an hourly emissions value.

Compliance with the annual emissions limitation shall be determined by applying the calculated hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

If required, the permittee shall demonstrate compliance with this emissions limitation through emissions tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18, 25 or 25A as appropriate.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

f. Emission Limitations:

NO_X emissions shall not exceed 7.03 lbs/hr and 30.79 tpy.

Applicable Compliance Method:

Compliance with these emissions limitations may be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.108 lb/mmBtu as specified by manufacturer's test data for this machine using a low NO_x control system to determine an hourly emissions value. After the installation of a steam injection or other equivalent NO_X control technology, performance tests shall be conducted to demonstrate compliance with the hourly NO_X emissions limit.

Compliance with the annual emissions limitation shall be determined by applying the measured hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

g. Emission Limitations:

CO emissions shall not exceed 8.57 lbs/hr and 37.54 tpy.

Applicable Compliance Method:

Compliance with these emission limitations may be determined by multiplying the maximum rated heat input capacity of the emissions unit (65.1 mmBtu/hr at 0^0 F for hourly emissions or 55.65 mmBtu/hr at 55^0 F for annual emissions) by an emissions factor of 0.1316 lb/mmBtu as specified in the manufacturer's guaranteed performance data to determine an hourly emissions value. After the installation of a steam injection or other equivalent NO_X control technology, performance tests shall be conducted to demonstrate compliance with the hourly CO emissions limit.

Compliance with the annual emissions limitation shall be determined by applying the measured hourly emissions limit to the summation of monthly hours of operation, as required by d)(4).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

h. Emission Limitations:

The total annual emissions of NO_X and CO from emissions units B013 through B017, combined, shall not exceed 212.91 tons and 221.17 tons, respectively.

Applicable Compliance Method:

Compliance with the annual emissions limitations for B013 through B017, combined, shall be determined by the summation of monthly emissions from emissions units B013 through B017 collectively, as required by d)(4).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI 02-22027]

g) Miscellaneous Requirements

(1) None.

3. F001 and F002, Roadways and Parking Lots Group

Operations, Property and/or Equipment Description:

EU ID	Operations, Property and/or Equipment Description
F001	Paved roadways and parking lots used for the TiO_2 process.
F002	Unpaved roadways and parking lots used for the $TiCl_4$ process.

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

Paved roadways and parking areas:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-17-07(B)(4)	There shall be no visible particulate emissions except for a period of time not to exceed 6 minutes during any 60-minute period.
b.	OAC rule 3745-17-08(B), (B)(8), (B)(9)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed. See b)(2)a, b)(2)c, b)(2)e, b)(2)f and b)(2)g.

Unpaved roadways and parking areas:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-07(B)(5)	There shall be no visible particulate emissions except for a period of time not to exceed 13 minutes during any 60-minute period.
d.	OAC rule 3745-17-08(B), (B)(2)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed. See b)(2)b through b)(2)g.

(2) Additional Terms and Conditions

a. The permittee shall employ reasonably available control measures on all paved roadways and parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the paved roadways and parking areas by watering at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other equally effective control measures to ensure compliance.

b. The permittee shall employ reasonably available control measures on all unpaved roadways and unpaved parking areas for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the unpaved roadways with water at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other equally effective control measures to ensure compliance. Use of used oil as a dust suppressant is prohibited.

c. The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a paved or unpaved roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

d. Any unpaved roadway or any unpaved parking area, which during the term of this permit is paved or takes the characteristics of a paved surface due to the application of certain types of dust suppressants, may be controlled with the control measure(s) specified above for paved surfaces. Any unpaved roadway that takes the characteristics of a paved roadway due to the application of certain types of dust suppressants shall remain subject to the visible emission limitation for unpaved roadways and parking areas. Any unpaved roadway or parking area that is paved shall be subject to the visible emission limitation for paved roadways and parking areas.

e. The permittee shall promptly remove, in such a manner as to minimize or prevent suspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.

f. Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.

g. Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-17-08.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) Except as otherwise provided in this section, the permittee shall perform inspections of each of the unpaved and paved roadway segments and each of the paved and unpaved parking areas in accordance with the following frequencies:

roadway/parking area	surface type	minimum inspection frequency
all	paved	three days/week
all	unpaved	three days/week

The unpaved roadway inspection frequency is deemed to be acceptable because unpaved roadways are not frequently traveled. The majority of traffic at this facility is on the paved roadways.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(2) The purpose of the inspections is to determine the need for implementing the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway or parking area that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above-identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) Notwithstanding the frequencies of the inspections specified in d)(1), the permittee may reduce the frequency for this emissions unit from three days per week to weekly if the following conditions are met:

a. for one full quarter the permittee's inspections indicate no visible emissions; and

b. the permittee continues to comply with all the record keeping and monitoring requirements specified in d).

The permittee shall revert to three days per week readings if any visible emissions are observed.

[Authority for term: OAC rule 3745-77-07(C)(1)]

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

a. an identification of each roadway segment and parking area inspected and the road surface type;

b. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover or precipitation;

c. for each roadway segment and parking area, whether or not visible emissions were noted during traffic;

d. the date of each inspection where it was determined by the permittee that it was necessary to implement the control measures;

e. the dates the control measures were implemented; and

f. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in d)(4)f shall be kept separately for (i) the paved roadways and paved parking areas and (ii) the unpaved roadways and unpaved parking areas, and shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

[Authority for term: OAC rule 3745-77-07(C)(1)]

e) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify all of the following occurrences:

a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and

b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

[Authority for term: OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

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

There shall be no visible particulate emissions except for a period of time not to exceed 6 minutes during any 60-minute period from the paved roadways and parking areas.

Applicable Compliance Method:

Compliance with the visible emission limitations for the paved roadways and parking areas identified above shall be determined in accordance with Test Method 22 as set forth in Appendix A on Test Methods in 40 CFR, Part 60 (Standards of Performance for New Stationary Sources), as such Appendix existed on July 1, 2001, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1)]

b. Emission Limitation:

There shall be no visible particulate emissions except for a period of time not to exceed 13 minutes during any 60-minute period from the unpaved roadways.

Applicable Compliance Method:

Compliance with the visible emission limitations for the unpaved roadways identified above shall be determined in accordance with Test Method 22 as set forth in Appendix A on Test Methods in 40 CFR, Part 60 (Standards of Performance for New Stationary Sources), as such Appendix existed on July 1, 2002, and the modifications listed in paragraphs (B)(4)(a) through (B)(4)(d) of OAC rule 3745-17-03.

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

4. P001, Oxygen Preheater and TiCl4 Vaporizer

Operations, Property and/or Equipment Description:

Oxidation process: including an aluminum chloride generator (DC-813), an oxidation reactor (DC-827) with a paire filter (FG-822) product capture device, a slurry tank (FA-813), a neutralization tank (FA-601) and a packed column caustic scrubber (DA-847) with a double venturi.

Natural gas fired 16.8 mmBtu/hr $TiCl_4$ Vaporizer (BA-812), natural gas fired 9.5 mmBtu/hr Oxygen Preheater (BA-815), and natural gas fired 2.2 mmBtu/hr Oxygen Preheater (BA-816).

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 are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

Oxidation Process:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI P0106445 effective July 2, 2010)	Particulate emissions (PE) shall not exceed 41.2 lbs/hr from the stack egress point of the caustic scrubber (DA-847). The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). See b)(2)a.
b.	OAC rule 3745-17-11	The emission limitation established by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See b)(2)a.

16.8 mmBtu/hr natural gas-fired titanium tetrachloride ($TiCl_4$) vaporizer (BA-812):

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-31-05(A)(3) (PTI P0106445 effective July 2, 2010)	Carbon monoxide (CO) emissions shall not exceed 0.67 lb/hr. Nitrogen oxides (NO_x) emissions shall not exceed 3.86 lbs/hr. Organic compound (OC) emissions shall not exceed 0.18 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-10(B)(1).
d.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/mmBtu of actual heat input.

9.5 mmBtu/hr natural gas-fired oxygen (O_2) preheater (BA-815):

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-31-05(A)(3) (PTI P0106445 effective July 2, 2010)	CO emissions shall not exceed 0.46 lb/hr. NO_x emissions shall not exceed 2.13 lbs/hr. OC emissions shall not exceed 0.10 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-10(B)(1).
f.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/mmBtu of actual heat input.

2.2 mmBtu/hr natural gas-fired oxygen (O_2) preheater (BA-816):

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
g.	OAC rule 3745-31-05(A)(3) (PTI P0106445 effective July 2, 2010)	CO emissions shall not exceed 0.18 lb/hr. NO_x emissions shall not exceed 0.21 lb/hr. OC emissions shall not exceed 0.02 lb/hr.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-10(B)(1).
h.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/mmBtu of actual heat input.

All egress points:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
i.	OAC rule 3745-31-05(A)(3) (PTI P0106445 effective July 2, 2010)	PE shall not exceed 183.5 tons/year. CO emissions shall not exceed 5.74 tons/year. NO_x emissions shall not exceed 27.18 tons/year. OC emissions shall not exceed 1.33 tons/year.
j.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
k.	40 CFR Part 63, Subpart DDDDD (63.7480 – 63.7575) [In accordance with 40 CFR 63.7499, this emissions unit includes two existing natural gas-fired process heaters less than 10 mmBtu located at a major source; and an existing natural gas-fired process heater greater than 10 mmBtu located at a major source.]	Per 63.7500, only work practices apply to BA-812,BA-815 and BA-816 for this emissions unit. See b)(2)d.
l.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)e.

(2) Additional Terms and Conditions

a. Exhaust gases from the paire filter (FG-822) product capture device, serving the oxidation reactor, are routed to the Chlorination Process (P002) instead of the atmosphere. However, during startup or equipment pressure testing, nitrogen or oxygen is used to warm the oxygen preheater(s), BA-815 and BA-816, so that no

air contaminant emissions are generated when the paire filter gases are exhausted to the atmosphere.

b. Because this emissions unit burns only natural gas, there is no applicable SO_2 emissions limitation in OAC chapter 3745-18.

c. The work practices, operational restrictions, monitoring, record keeping, reporting and testing requirements specified by 40 CFR Part 63, Subpart DDDDD are effective after the initial compliance date of January 31, 2016.

(Authority for term: 40 CFR Part 63, Subpart DDDDD)

d. The permittee shall comply with the work practice restrictions required pursuant to 40 CFR Part 63, Subpart DDDDD, including the applicable parts of the following sections:

63.7500(a)(3)	Operate and maintain source consistent with safety and good air pollution control practices.
63.7500(b)	Option for alternative work practice standards
63.7510 and Table 3 Work Practice Standards 2.	Initial tune-up by January 31, 2016
63.7515(d), 63.7540(a)(11) and Table 3 Work Practice Standards 2	Biennial tune-ups for units less than 10 mmBtu/hr
63.7510(d), 63.7540(a)(10) and Table 3 Work Practice Standards, 3	Annual tune-ups for units greater than 10 mmBtu/hr
63.7510, 63.7510(e), 63.7540 and Table 3 Work Practice Standards, 4	One-time energy assessment by January 31, 2016

[Authority for term: 40 CFR Part 63, Subpart DDDDD]

e. This emissions unit is a pollutant specific emissions unit for PM according to 40 CFR Part 64 and has developed a CAM plan.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a CAM plan for emissions unit P002. The permittee shall comply with the provisions of the CAM plan during any operation of the aforementioned emissions unit.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the $TiCl_4$ vaporizer (BA-812) burner and in the O_2 preheater burners (BA-815 and BA-816).

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI P0106445]

d) Monitoring and/or Recordkeeping Requirements

(1) For each day during which the permittee burns a fuel other than natural gas in $TiCl_4$ vaporizer (BA-812) burner or in the O_2 preheater burners (BA-815 and BA-816), the permittee shall maintain a record of the type and quantity of fuel burned.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(2) The permittee shall maintain daily records of the number of hours the emissions unit was in operation.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(3) The permittee shall properly operate and maintain equipment to monitor:

a. the packed column, caustic scrubber (DA-847) pH of the scrubber liquor during operation of this emissions unit, except for periods of startup, shutdown and calibration periods; and

b. the packed column, caustic scrubber (DA-847) scrubber water flow rate, in gallons per minute, during operation of this emissions unit, except for periods of startup, shutdown and calibration periods.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(4) The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), unless the permittee determines that a departure therefrom is warranted based on good engineering and maintenance practices. The permittee shall record the pH of the scrubber liquor and the scrubber water flow rate on a once per 12-hour shift basis.

For purposes of this condition, the optimum values are:

a. The pH of the scrubber liquor for the packed column, caustic scrubber (DA-847) is at or above 8 while the emissions unit is in operation, except during startup, shutdown or calibration periods.

b. The optimum value for the scrubber water flow rate for the packed column, caustic scrubber (DA-847) is a minimum value, in gallons per minute, established either during the most recent performance test that demonstrated that the emissions unit was in compliance or by the scrubber manufacturer's written

recommendation while the emissions unit is in operation, except during startup, shutdown or calibration periods.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

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

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

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

e. the findings and recommendations.

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

f. a description of the corrective action;

g. the date the corrective action was completed;

h. the date and time the deviation ended;

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

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

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

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(6) These optimum values are effective for the duration of this permit. Any changes in the optimum values must be approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the optimum values based upon information obtained during future emission tests that demonstrate compliance with the allowable

emission rates for this emissions unit. In addition, approved revisions to the optimum values will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative permit modification.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(7) The CAM plan for this emissions unit has been developed for particulate matter emissions. The CAM performance indicator for particulate matter emissions is the scrubbing liquid flow rate to the packed column, caustic scrubber (DA-847).

a. The optimum value for the scrubber water flow rate for the packed column, caustic scrubber (DA-847) is a minimum value, in gallons per minute, established either during the most recent performance test that demonstrated that the emissions unit was in compliance or by the scrubber manufacturer's written recommendation while the emissions unit is in operation, except during startup, shutdown or calibration periods.

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

(8) When the emissions unit is operating outside the indicator ranges, 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 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.

If a CAM indicator is outside of the designated range for more than 5% of the operating time for a reporting period, the Director may require a Quality Improvement Plan for that CAM indicator in accordance with 40 CFR 64.8.

If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance, the permittee shall promptly notify the Ohio EPA Northeast District Office, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

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

(9) The permittee shall comply with the monitoring and recordkeeping required pursuant to 40 CFR Part 63, Subpart DDDDD, including the applicable parts of the following sections:

63.7555(a)(1)	Records of each notification and report
63.7555(a)(2)	Records of compliance demonstrations

[Authority for term: 40 CFR Part 63, Subpart DDDDD]

e) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the $TiCl_4$ vaporizer (BA-812) burner or in the O_2 preheater burners (BA-815 and BA-816). Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(2) The permittee shall submit quarterly reports that identify the following information concerning the operation of the packed column, caustic scrubber (DA-847) during the operation of this emissions unit:

a. each period of time when the pH of the scrubber liquor for the packed column, caustic scrubber (DA-847) was outside of the optimum value;

b. each period of time when the scrubber water flow rate for the packed column, caustic scrubber (DA-847) was outside of the optimum value;

c. an identification of each incident of deviation described in (a) or (b) where a prompt investigation was not conducted;

d. an identification of each incident of deviation described in (a) or (b) where prompt corrective action, that would bring the pH of the scrubber liquor or the scrubber water flow rate into compliance with the optimum value, was determined to be necessary and was not taken; and

e. an identification of each incident of deviation described in (a) or (b) where proper records were not maintained for the investigation and/or the corrective action.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(3) The permittee shall submit annual reports that specify the CO, NO_x, OC and PE for the previous calendar year, in tons/year. These reports shall be submitted by April 15 of each year. The fee emissions report submittal, required by OAC rule 3745-77-07(A)(8) and OAC rule 3745-78, will fulfill the requirements of this permit term.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106445]

(4) The permittee shall comply with the reporting and notification required pursuant to 40 CFR Part 63, Subpart DDDDD, including the applicable parts of the following sections:

63.7495(d) and 63.7545	Notifications and notification schedule
63.7550(a) and (b), and Table 9	Annual and biennial compliance reporting must be postmarked by January 31 after the compliance period.
63.7550(c)(1) and (c)(5)(i) through (iv) and (xiv)	Required compliance report content

[Authority for term: 40 CFR Part 63, Subpart DDDDD]

f) Testing Requirements

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

a. Emission Limitation:

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

Applicable Compliance Method:

If required, compliance shall be determined through visible particulate 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).

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

b. Emission Limitation:

PE shall not exceed 41.2 lbs/hr from the stack egress point of the caustic scrubber (DA-847).

Applicable Compliance Method:

The following equation may be used to determine the worst case emissions rate:

E_DA847(PE) = Conc_PE x Q x 1 lb PE/7,000 grains PE x [528/(460 + T) x (1 - H_2O)] x 60 min/hr

where:

E_DA847(PE) = PE rate from the caustic scrubber, in pounds per hour;

Conc_PE = maximum PE concentration in scrubber exhaust, which is 0.03 grain PE/dscf, per engineering estimates noted in the application for PTI P0106445;

Q = scrubber exhaust flow rate, which is approximately 1,270 acfm as noted in the application for PTI P0106445;

T = actual temperature of scrubber exhaust, which is approximately 68 degrees Fahrenheit; and

H_2O = moisture content of scrubber exhaust, which is approximately 0.25.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

c. Emission Limitation:

PE shall not exceed 0.020 lb/mmBtu of actual heat input from each egress point for the $TiCl_4$ vaporizer (BA-812), the O_2 preheater (BA-815) and the O_2 preheater (BA-816).

Applicable Compliance Method:

The following equation may be used to determine the worst case emissions rate:

E(PE) = EF/HC

where:

E_BA812(PE) = the PE rate from the $TiCl_4$ vaporizer (BA-812), in pounds PE per million Btu of maximum heat input;

E_BA815(PE) = the PE rate from the O_2 preheater (BA-815), in pounds PE per million Btu of maximum heat input;

E_BA816(PE) = the PE rate from the O_2 preheater (BA-816), in pounds PE per million Btu of maximum heat input;

EF = the emission factor for the PE rate, 1.9 pounds of filterable particulate emissions per million cubic feet of natural gas employed, specified in AP-42, Table 1.4-2, Chapter 1.4(7/98); and

HC = maximum heat content of natural gas, which is 1,029 Btu per cubic foot as specified in the application for PTI P0106445.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60,

Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

d. Emission Limitation:

PE shall not exceed 183.5 tons/year from all egress points.

Applicable Compliance Method:

To determine the annual rate, the following equation may be used:

PE_TOTAL = [E_DA847(PE) + (E_BA812(PE) x mmBtu_BA812/hr) + (E_BA815(PE) x mmBtu_BA815/hr) + (E_BA816(PE) x mmBtu_BA816/hr)] x HRS/YR x 1 ton/2000 lbs.

where:

PE_TOTAL = the total PE rate from all egress points, in tons/year;

mmBtu_BA812/hr = the maximum rated heat input capacity of the $TiCl_4$ vaporizer (BA-812), 16.8 mmBtu/hr;

mmBtu_BA815/hr = the maximum rated heat input capacity of the O_2 preheater (BA-815), 9.5 mmBtu/hr;

mmBtu_BA816/hr = the maximum rated heat input capacity of the O_2 preheater (BA-816), 2.2 mmBtu/hr; and

HRS/YR = the actual hours of operation per year, which is the sum of the daily operating hours, as specified in the record keeping requirements in d)(2), for the calendar year.

[Authority for term: OAC rule 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

e. Emission Limitations:

CO emissions shall not exceed 0.67 lb/hr from the $TiCl_4$ vaporizer (BA-812) egress.

CO emissions shall not exceed 0.46 lb/hr from the O_2 preheater (BA-815) egress.

CO emissions shall not exceed 0.18 lb/hr from the O_2 preheater (BA-816) egress.

Applicable Compliance Method:

The following equation may be used to determine the worst case emissions rate:

E(lbs/hr) = EF x mmBtu/hr x cf/1029 Btu.

where:

E(lbs/hr) = the rate of CO emissions, in pounds/hour;

EF_BA812(CO) = the CO emissions factor for BA-812, 41.16 pounds of CO emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI P0106445;

EF_BA815(CO) = the CO emissions factor for BA-815, 49.7 pounds of CO emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI P0106445; and

EF_BA816(CO) = the CO emissions factor for BA-816, 84 pounds of CO emissions per million cubic feet of natural gas employed for small, uncontrolled, natural gas-fired boilers, specified in AP-42, Table 1.4-1, Chapter 1.4 (7/98).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

f. Emission Limitation:

NO_x emissions shall not exceed 3.86 lbs/hr from the $TiCl_4$ vaporizer (BA-812) egress.

NO_x emissions shall not exceed 2.13 lbs/hr from the O_2 preheater (BA-815) egress.

NO_x emissions shall not exceed 0.21 lb/hr from the O_2 preheater (BA-816) egress.

Applicable Compliance Method:

The following equation may be used to determine the worst case emissions rate:

E(lbs/hr) = EF x mmBtu/hr x cf/1029 Btu.

where:

E(lbs/hr) = the rate of NO_x emissions, in pounds/hour;

EF_BA812(NO_x) = the NO_x emissions factor for BA-812, 236.67 pounds of NO_x emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI 02-16459;

EF_BA815(NO_x) = the NO_x emissions factor for BA-815, 230.50 pounds of NO_x emissions per million cubic feet of natural gas employed, derived from manufacturer data, in the application for PTI 02-16459; and

EF_BA816(NO_x) = the NO_x emissions factor for BA-816, 100 pounds of NO_x emissions per million cubic feet of natural gas employed for small, uncontrolled, natural gas-fired boilers, specified in AP-42, Table 1.4-1, Chapter 1.4 (7/98).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7E.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

g. Emission Limitations:

OC emissions shall not exceed 0.18 lb/hr from the $TiCl_4$ vaporizer (BA-812) egress.

OC emissions shall not exceed 0.10 lb/hr from the O_2 preheater (BA-815) egress.

OC emissions shall not exceed 0.02 lb/hr from the O_2 preheater (BA-816) egress.

Applicable Compliance Method:

To determine the worst case emissions rate, the following equation may be used:

E(lbs/hr) = EF x mmBtu/hr x cf/1029 Btu.

where:

E(lbs/hr) = the rate of OC emissions, in pounds/hour;

EF_BA812(OC) = EF_BA815(OC) = EF_BA816(CO) = the OC emissions factor, 11 pounds of OC emissions per million cubic feet of natural gas employed for small, uncontrolled, natural gas-fired boilers, specified in AP-42, Table 1.4-2, Chapter 1.4 (7/98).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 18, 25 or 25A, as appropriate.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

h. Emission Limitations:

CO emissions shall not exceed 5.74 tons/year from all egress points.

Applicable Compliance Method:

The annual emission limitation above was determined by multiplying the CO hourly emission limitation by 8,760 hours per year and dividing 2,000 lbs/ton. Therefore, compliance with the annual limit is assumed, provided compliance with the CO hourly limit is maintained.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

i. Emission Limitation:

NO_x emissions shall not exceed 27.18 tons/year from all egress points.

Applicable Compliance Method:

The annual emission limitation above was determined by multiplying the NO_x hourly emission limitation by 8,760 hours per year and dividing 2,000 lbs/ton. Therefore, compliance with the annual limit is assumed, provided compliance with the NO_x hourly limit is maintained.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

j. Emission Limitation:

OC emissions shall not exceed 1.33 tons/year from all egress points.

Applicable Compliance Method:

The annual emission limitation above was determined by multiplying the OC hourly emission limitation by 8,760 hours per year and dividing 2,000 lbs/ton. Therefore, compliance with the annual limit is assumed, provided compliance with the OC hourly limit is maintained.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106445]

g) Miscellaneous Requirements

(1) None.

5. P002, Chlorination Process

Operations, Property and/or Equipment Description:

Chlorination process: including three chlorinators (DC-701-7, DC-701-8 and DC-701-9), three cyclones (FC-702, FC-704 and FC-709) and six condensers (DA-722 A/B, DA-723 A/B and DA-724 A/B) with a venturi scrubber (PA-735), a spray tower (DA-435), a venturi scrubber (PA-736), a demister (DA-736) and a packed column scrubber (DA-780) with a mist eliminator that are used to control normal production emissions via CB-703 egress.

In addition a scrubber spray tower (DA-735), a venturi scrubber (PA-770), a demister (DA-770) and a demister (FG-770B) are used to control emissions during normal and maintenance operations via CB-703 egress; and a venturi scrubber (PA-404) and a cyclone separator (FC-404) are used to control emissions during cold startup operations via CB-404 egress.

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 02-691 effective 10/27/1980) (PTI 02-1545 effective 6/6/1984)	The requirements of this rule are equivalent to the requirements of OAC rules 3745-17-07, 3745-17-11 and 3745-18-06(E)(2).
b.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions (PE) from any stack egress shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
c.	OAC rule 3745-17-11	PE shall not exceed 46.8 lbs/hr. See b)(2)a.
d.	OAC rule 3745-18-06(E)(2)	Sulfur dioxide (SO_2) emissions shall not exceed 484 lbs/hr. See b)(2)b.
e.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)c.

(2) Additional Terms and Conditions

a. The allowable, hourly PE rate is based on Table 1 in OAC rule 3745-17-11. The uncontrolled mass rate of emissions, which is used to determine the allowable PE rate using curve P-1 within Figure II in OAC rule 3745-17-11, cannot be accurately ascertained.

b. In the event the permittee elects to demonstrate compliance with the short-term SO_2 allowable emission rate by use of a continuous emission rate monitoring system ("CERMS"), the emissions unit shall comply with the requirements in B.3 if the facility-wide terms.

c. This emissions unit is a pollutant specific emissions unit for PM and SO_2 according to 40 CFR Part 64 and has developed a CAM plan.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a CAM plan for emissions unit P002. The permittee shall comply with the provisions of the CAM plan during any operation of the aforementioned emissions unit.

c) Operational Restrictions

(1) The permittee shall employ the venturi scrubber PA-736 whenever the emissions unit is in operation except during startup, shutdown, maintenance, malfunction or calibration periods.

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

(2) The operational requirements for the SO_2 CERMs specified in facility-wide term B.3.a) apply to this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall collect and record:

a. each instance the process was vented to the startup scrubber system when the source was in operation (during cold startup) including the start time and date and end time and date; and

b. each instance the process was not vented to venturi scrubber SBR-736 when the source was in operation, including the start time and date and end time and date.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(2) The permittee shall properly operate and maintain equipment to monitor:

a. the venturi scrubber (PA-736) water flow rate, gallons per minute, during operation of this emissions unit, except for periods of startup, shutdown and calibration periods;

b. the venturi scrubber (PA-770) water flow rate, gallons per minute, during normal and/or maintenance operation(s) of this emissions unit, except for periods of startup, shutdown and calibration periods; and

c. the venturi scrubber (PA-404) water flow rate, gallons per minute, during cold startup operation.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), unless the permittee determines that a departure therefrom is warranted based on good engineering and maintenance practices.

The permittee shall record the liquid flow rate of the venturi scrubbers on a once per 12-hour shift basis.

For purposes of this condition, the optimum ranges are:

a. The main process control system venturi scrubber (PA-736) liquid flow rate as a 1-hour average is not less than the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance except during startup, shutdown, maintenance, malfunction, or calibration periods.

b. The maintenance process control system venturi scrubber (PA-770) liquid flow rate 1-hour average is not less than the manufacturer's recommended operating value or the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance while the emissions unit is in normal and/or maintenance operation except during startup, shutdown, maintenance, malfunction, or calibration periods.

c. The startup control system venturi scrubber (PA-404) liquid flow rate as a 1- hour average is not less than the manufacturer's recommended operating value or the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance while the emissions unit is in cold startup operation.

[Authority for term: OAC rule 3745-77-07(C)(1)]

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

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

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

e. the findings and recommendations.

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

f. a description of the corrective action;

g. the date the corrective action was completed;

h. the date and time the deviation ended;

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

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

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

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

[Authority for term: OAC rule 3745-77-07(C)(1)]

(5) These limits for the liquid flow rates are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the permitted range or limit for the pressure drop or liquid flow rate based upon information obtained during future performance tests that demonstrate compliance with the allowable particulate emissions rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor modification.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(6) The permittee shall operate and maintain existing equipment to continuously monitor and record the chlorine concentration in parts per million at the P001STK1310 egress. The permittee shall maintain records of all data obtained by the continuous chlorine monitoring system including, but not limited to, parts per million chlorine on an instantaneous basis, and results of daily zero/span calibration checks.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(7) The permittee shall implement a Standard Operating Procedure to respond to excessive levels of chlorine concentrations as determined by the continuous monitor. Such a procedure shall include acknowledgement of an alarm condition by operating personnel, the cause of the alarm, and corrective action taken.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(8) The CAM plan for this emissions unit has been developed for particulate matter emissions. The CAM performance indicators for particulate emissions are the scrubbing liquid flow rate to the main process control system venturi scrubber (PA-736), the maintenance control system venturi scrubber (PA-770), and the startup control system venturi scrubber (PA-404).

a. The main process control system venturi scrubber (PA-736) liquid flow rate as a 1-hour average is not less than the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance except during startup, shutdown, maintenance, malfunction, or calibration periods.

b. The maintenance process control system venturi scrubber (PA-770) liquid flow rate 1-hour average is not less than the manufacturer's recommended operating value or the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance while the emissions unit is in normal and/or maintenance operation except during startup, shutdown, maintenance, malfunction, or calibration periods.

c. The startup control system venturi scrubber (PA-404) liquid flow rate as a 1- hour average is not less than the manufacturer's recommended operating value or the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance while the emissions unit is in cold startup operation.

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

(9) The CAM plan for this emissions unit has been proposed for SO_2 emissions. The CAM primary performance indicators for SO_2 are the use of SO_2 CERMS. In the event that the CERMS is not certified or is out of service, the CAM performance indicators for SO_2 emissions while employing $TiCl_4$ pourback shall default to the scrubbing liquid flow rate and the scrubbing liquid pH of the main process control system venturi scrubber (DA-780) as specified below:

a. The venturi scrubber (DA-780) caustic addition rate to the scrubbing liquid as a 1-hour average, while employing $TiCl_4$ pourback in this emissions unit shall be not less than 2.1 gallons per minute until such time that appropriate caustic addition rate is determined through plant testing or the use of SO_2 CEMs during TiCl4 pourback; and

b. The venturi scrubber (DA-780) scrubbing liquid flow rate, in gallons per minute as a 3-hour average, while employing $TiCl_4$ pourback in this emissions unit operation is not less than the manufacturer's recommended operating value or

the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance.

The CAM plan shall be revised and submitted to Ohio EPA to include appropriate caustic addition rate within 90 days of commencing $TiCl_4$ pourback in the emissions unit. If certified CERMs is not in place, the permittee shall determine appropriate SO_2 indicator ranges through emission testing within 30 days of commencing $TiCl_4$ pourback.

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

(10) The permittee shall maintain sufficient records to document the date and time the TiCl4 pourback process are employed. Records may be maintained in an electronic form.

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

(11) When the emissions unit is operating outside the indicator ranges, 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 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.

If a CAM indicator is outside of the designated range for more than 5% of the operating time for a reporting period, the Director may require a Quality Improvement Plan for that CAM indicator in accordance with 40 CFR 64.8.

If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance, the permittee shall promptly notify the Ohio EPA Northeast District Office, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

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

(12) The monitoring and record keeping requirements for the SO_2 CERMs specified in facility-wide term B.3.b apply to this emissions unit.

e) Reporting Requirements

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

a. each period of time (start time and date, and end time and date) when the venturi scrubber (PA-736) wet scrubber liquid flow rate was lower than the recommended minimum specified above;

b. each period of time (start time and date, and end time and date) during cold startup operation when the venturi scrubber (PA-404) liquid flow rate was lower than the recommended minimum specified above;

c. each period of time (start time and date, and end time and date) during maintenance operation when venturi scrubber (PA-770) liquid flow rate was lower than the recommended minimum specified above;

d. each period of time (start time and date, and end time and date) while employing $TiCl_4$ pourback when the venturi scrubber (SBR-1305) caustic addition rate was less than the CAM indicator range;

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

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

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

If the permittee elects to utilize a certified SO_2 CERMs, the quarterly deviation reporting in e)(1)d is no longer required.

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

(2) The permittee shall submit quarterly reports that identify each instance the process was vented to the cold startup system including the start time and date and end time and date.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) The permittee shall submit reports that identify each occasion when the chlorine emissions were in excess of the reportable quantity required by the Emergency Planning and Community Right-to-Know Act (EPCRA), except during calibration spans. These reports shall contain the date, commencement and completion times, duration of each occasion, the total chlorine emissions for each occasion (in pounds), and the corrective actions taken (if any). Each report shall be submitted within 30 days after the reportable quantity chlorine release occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(4) Within thirty (30) days following the end of each calendar quarter, the permittee shall submit reports to the Northeast District Office reports of the continuous chlorine monitoring system downtime, except during calibration spans, 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 process 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 be included in the quarterly report.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(5) The reporting requirements for the SO_2 CERMs specified in facility-wide term B.3.c) apply to this emissions unit.

f) Testing Requirements

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

a. Emission Limitation:

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

Applicable Compliance Method:

If required, compliance shall be determined through visible particulate 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).

b. Emission Limitation:

PE shall not exceed 46.8 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term filterable particulate matter emission limitations through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10).

c. Emission Limitation:

SO_2 emissions shall not exceed 484 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 6C and the procedures in OAC

rule 3745-18-04, or, if the permittee elects, the SO_2 CEMS data in accordance with the facility-wide term B.3.d).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1)]

(2) The testing requirements for the SO_2 CERMs specified in facility-wide term B.3.d) apply to this emissions unit.

g) Miscellaneous Requirements

(1) None.

6. P011, Ore and Coke Recovery

Operations, Property and/or Equipment Description:

Recovery of ore and coke system: belt wash, belt filter, 6.0 mmBtu/hr natural gas-fired dryer and storage silo with bin vent dust collector (FG-332), venturi scrubber (PA-330) and absorber/separator (DA-330) to control particulate emissions.

a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below that 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) Permit to install 02-08387, as issued on May 16, 2002 and P0105815 Administrative Modification Effective 12/22/2009	Visible particulate emissions (PE) shall not exceed 10% opacity as a 6-minute average. PE shall not exceed 0.99 lb/hr and 4.34 tons/year. Carbon monoxide (CO) emissions shall not exceed 2.30 lbs/hr and 10.1 tons/year. Nitrogen oxides (NO_X) emissions shall not exceed 0.82 lb/hr and 3.59 tons/year.
b.	OAC rule 3745-17-07(A)	See b)(2)a.
c.	OAC rule 3745-17-11(A)	See b)(2)a.
d.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)b.

(2) Additional Terms and Conditions

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

b. This emissions unit is a pollutant specific emissions unit for PM according to 40 CFR Part 64 and has developed a CAM plan.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a CAM plan for emissions unit P011. The permittee shall comply with the provisions of the CAM plan during any operation of the aforementioned emissions unit.

c) Operational Restrictions

(1) The permittee shall employ the bin vent dust collector (FG-332) whenever material is transferred to the storage silo, also known as the transfer ore bin (FA-332).

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI P0105815]

(2) The permittee shall employ the absorber/separator (DA-330) whenever the emissions unit is in operation.

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI P0105815]

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the bin vent dust collector (FG-332) egress. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:

a. the location of the emissions;

b. the color of the emissions;

c. whether the emissions are representative of normal operations;

d. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

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

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(2) The permittee shall maintain daily records that document any time periods when the absorber/separator (DA-330) was not in service when the emissions unit was in operation.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(3) The permittee shall maintain daily records of the number of hours the emissions unit was in operation.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(4) The permittee shall properly operate and maintain equipment to monitor the venturi scrubber (PA-330) pressure drop, in inches of water, during operation of this emissions unit, except for periods of startup, shutdown and calibration periods. The monitoring equipment shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s), unless the permittee determines that a departure therefrom is warranted based on good engineering and maintenance practices.

The permittee shall record the pressure drop across the venturi scrubber on a once per 12-hour shift basis.

For purposes of this condition, the optimum range for the pressure drop across the venturi scrubber (PA-330) is 2.0 to 15.0 inches of water, except during startup, shutdown or calibration periods.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(5) Whenever the monitored value for the pressure drop deviates from the range specified below, the permittee shall promptly investigate the cause of the deviation.

The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began and the magnitude of the deviation at that time;

b. the date(s) the investigation was conducted;

c. the names of the personnel who conducted the investigation; and

d. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the venturi scrubber (PA-330) within the optimum range specified below, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended.

The permittee shall maintain records of the following information for each corrective action taken:

e. a description of the corrective action, the date it was completed, the date and time the deviation ended;

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

g. the pressure drop readings immediately after the corrective action; and

h. the names 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.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(6) This optimum range is effective for the duration of this permit. Any changes in the optimum range must be approved in writing by the Ohio EPA Northeast District Office. The permittee may request revisions to the range based upon information obtained during future particulate emission tests that demonstrate compliance with the allowable particulate emission rate for this emissions unit. In addition, approved revisions to the range will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor permit modification.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(7) The CAM plan for this emissions unit has been developed for particulate matter emission. The CAM performance indicators for particulate matter emissions are the pressure drop across the venturi scrubber (PA-330).

a. The main process control system venturi scrubber (PA-330) pressure drop as a 1-hour average is not less than the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance except during startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events.

(8) When the emissions unit is operating outside the indicator ranges, 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 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.

If a CAM indicator is outside of the designated range for more than 5% of the operating time for a reporting period, the Director may require a Quality Improvement Plan for that CAM indicator in accordance with 40 CFR 64.8.

If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance, the permittee shall promptly notify the Ohio EPA Northeast District Office, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

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

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 bin vent dust collector (FG-332); and

b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(2) The permittee shall notify the Ohio EPA Northeast District Office in writing of any daily record showing that the absorber/separator (DA-330) was not in service when the emissions unit was in operation. The notification shall include a copy of such record and shall be sent to the Ohio EPA Northeast District Office within 30 days after the event occurs.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

(3) The permittee shall submit quarterly reports that identify the following information concerning the operation of the venturi scrubber (PA-330) during the operation of this emissions unit:

a. each period of time when the pressure drop across the venturi scrubber (PA-330) was outside of the optimum range;

b. an identification of each incident of deviation described in (a) where a prompt investigation was not conducted;

c. an identification of each incident of deviation described in (a) where prompt corrective action, that would bring the pressure drop into compliance with the optimum range, was determined to be necessary and was not taken; and

d. an identification of each incident of deviation described in (a) where proper records were not maintained for the investigation and/or the corrective action.

These quarterly reports shall be submitted (i.e., postmarked) by January 31, April 30, July 31, and October 31 of each year; and each report shall cover the previous calendar quarter.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

f) Testing Requirements

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

a. Emission Limitation:

Visible PE shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

Compliance shall be determined based upon OAC rule 3745-17-03(B)(1), if required by Ohio EPA.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0105815]

b. Emission Limitation:

PE shall not exceed 0.99 lb/hr from all egress points.

Applicable Compliance Method:

Compliance may be based upon the following methods:

i. Determination of the PE rate from the bin vent dust collector (FG-332) may be based on the following calculation:

PE (FG-332) = Q x PEconc. x 1 lb PE/7000 grains PE x 60 min/hr.

where:

PE (FG-332) = the PE rate from the bin vent dust collector (FG-332), in lbs/hr;

Q = maximum exhaust rate, which is 1550 dscf/min from the manufacturer specifications; and

PEconc. = the particulate concentration in the exhaust, which is 0.015 grain PE/dscf per manufacturer specifications.

ii. The measured PE rate, PE(DA-330), from the absorber/separator (DA-330) egress was determined to be 0.68 lb/hr via U.S. EPA Methods 1-5 tests conducted on February 23, 2000. The measured PE rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required.

iii. Determination of total PE rate:

E(T) = E(FG-332) + E(DA-330).

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 or equivalent, alternative method(s) (as approved by Ohio EPA).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0105815]

c. Emission Limitation:

PE shall not exceed 4.34 tons/year.

Applicable Compliance Method:

To determine the annual rate for PE, the actual, hourly, emission rate as determined in f)(1)b shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours for the calendar year, as required in the record keeping in d)(3), and divided by 2000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

d. Emission Limitation:

CO emissions shall not exceed 2.30 lbs/hr from the absorber/separator (DA-330) egress.

Applicable Compliance Method:

The measured CO rate from the absorber/separator (DA-330) egress was determined to be 1.83 lbs/hr via U.S. EPA Methods 1 through 4 and U.S. EPA Method 10 tests conducted on February 21, 2002. The measured CO emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and U.S. EPA Method 10 or equivalent, alternative method(s) (as approved by Ohio EPA).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0105815]

e. Emission Limitation:

CO emissions shall not exceed 10.1 tons/year.

Applicable Compliance Method:

To determine the annual rate for CO, the actual, hourly, emission rate as determined in f)(1)d shall be multiplied by the actual hours of operation, which is

the sum of the daily operating hours for the calendar year, as required in the record keeping in d)(3), and divided by 2000 lbs/ton.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0105815]

f. Emission Limitation:

NO_X emissions shall not exceed 0.82 lb/hr from the absorber/separator (DA-330) egress.

Applicable Compliance Method:

The measured NO_X rate from the absorber/separator (DA-330) egress was determined to be 0.73 lb/hr via U.S. EPA Methods 1 through 4 and U.S. EPA Method 7E tests conducted on February 21, 2002. The measured NO_X emissions rate from this test shall be used to determine compliance with the above emission limitation until such time that additional testing is required.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and U.S. EPA Method 7E or equivalent, alternative method(s) (as approved by Ohio EPA).

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0105815]

g. Emission Limitation:

NO_X emissions shall not exceed 3.59 tons/year.

Applicable Compliance Method:

To determine the annual rate for NO_X, the actual, hourly, emission rate as determined in f)(1)f shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours for the calendar year, as required in the record keeping in d)(3), and divided by 2000 lbs/ton.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0105815]

g) Miscellaneous Requirements

(1) None.

7. P012, Spray Dryer #1 - TiO2 Unit.

Operations, Property and/or Equipment Description:

TiO_2 paste feed tank (FE-917), No. 1 TiO_2 paste dryer (FF-919) and 21 mmBtu/hr natural gas fired burner (BA-918) with two baghouses (FD-921A & FD-921B) to control particulate emissions

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) d)(5)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI 02-14024 effective 9/16/2008)	Particulate emissions (PE) shall not exceed 4.0 lbs/hr and 17.5 tpy. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).
b.	OAC rule 3745-17-07(A)	Visible PE from any stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
c.	OAC rule 3745-17-11	See b)(2)a.
d.	OAC rule 3745-18-06	This emissions unit is exempt from paragraphs (D), (F) and (G) of this rule and from OAC rules 3745-18-07 to 3745-18-94 during any calendar day in which natural gas is the only fuel burned.

(2) Additional Terms and Conditions

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

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the No.1 TiO_2 paste dryer burner (BA-918).

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(A)]

(2) The permittee shall employ the two baghouse collection systems (FD-921A & FD-921B) at all times while the emissions unit is in normal operation.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(A)]

d) Monitoring and/or Recordkeeping Requirements

(1) For each day during which the permittee burns a fuel other than natural gas in the TiO_2 paste dryer burner (BA-918), the permittee shall maintain a record of the type and quantity of fuel burned and the sulfur content of the fuel.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall perform daily checks of the spray dryer egress (CB-925), 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. whether the visible emissions during the observation period were continuous or intermittent; and

e. any corrective actions taken to minimize or 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.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

(3) Notwithstanding the frequency of the inspections specified in d)(2), the permittee may reduce the frequency for this emissions unit from daily to three days per week if the following conditions are met:

a. for one full quarter the permittee's inspections indicate no visible particulate emissions; and

b. the permittee continues to comply with all the record keeping and monitoring requirements specified in d)(2).

The permittee shall revert to daily readings if any visible particulate emissions are observed.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

(4) The permittee shall collect and record the operating times for the capture (collection) system(s) and the process equipment associated with the emission unit.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

(5) Modeling to demonstrate compliance with the "Toxic Air Contaminant Statute" in ORC 3704.03(F)(4)(b) was not necessary because the emissions unit's maximum annual emissions for each toxic air contaminant, as defined in OAC rule 3745-114-01, will be less than 1.0 ton per year. OAC Chapter 3745-31 requires a permittee to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by OAC rule 3745-31-01. The permittee is hereby advised that changes in the composition of the materials or use of new materials that would cause the emissions of any toxic air contaminant to increase to above 1.0 ton per year may require the permittee to apply for and obtain a new permit-to-install.

[Authority for term: PTI 02-14024 and 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 spray dryer egress (CB-925); and

b. describe any corrective actions taken to minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous six-month period.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the TiO_2 paste dryer burner (BA-918). Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

a. Emission Limitation:

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

Applicable Compliance Method(s):

If required, compliance shall be determined through visible particulate 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).

b. Emission Limitation:

PE shall not exceed 4.0 lbs/hr.

Applicable Compliance Method:

To determine the actual worst case emission rate for PE, the following equation may be used:

E_PE = summation of [Qds x (PE_grain load) x (1 lb PE/7000 grains PE) x (60 min/hr)

where:

E_PE = PE rate, in pounds per hour;

Qds = dry, standard actual exhaust flow from final egress point (CB-925), measured during the most recent, representative stack test conducted at maximum capacity, i.e.,15,574 dry standard cubic feet per minute (dcfm) from the stack test conducted on July 29, 1999;

PE grain load = maximum particulate load from the final egress point (CB-925), in grains PE/dscf, measured during the most recent, representative stack test conducted at maximum capacity, i.e., 0.0025 grains PE/dscf, from the stack test conducted on July 29, 1999;

1 lb PE/7000 grains = grains to pounds conversion factor; and

60 min/hr = minutes to hours conversion factor.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

c. Emission Limitation:

PE shall not exceed 17.5 tpy.

Applicable Compliance Method:

To determine the annual rate for PE, the actual hourly, worst case emission rate as determined in f)(1)b shall be multiplied by the actual hours of operation, which is the sum of the daily operating hours, as required in the record keeping in d)(4), for the calendar year, and divided by 2000 lbs/ton.

[Authority for term: PTI 02-14024 and OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

8. P013, Spray Dryer #2 - TiO2 Unit

Operations, Property and/or Equipment Description:

TiO_2 paste feed tank (FA-614), No. 2 TiO_2 paste dryer (FF-946) and 37 mmBtu/hr natural gas fired burner (BA-946) with baghouse (FD-946) to control particulate emissions

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (Permit to install 02-14024, as issued on 2/22/2001 and P0115857 Administrative Modification effective 1/16/2014)	Particulate emissions (PE) shall not exceed 2.24 lbs/hr and 9.81 tpy. Carbon monoxide (CO) emissions shall not exceed 6.78 lbs/hr and 29.7 tpy. Nitrogen oxide (NO_X) emissions shall not exceed 4.40 lbs/hr and 19.3 tpy. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A).
b.	OAC rule 3745-17-07(A)	Visible PE from the stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
c.	OAC rule 3745-17-11(B)	See (b)(2)a.
d.	40 CFR Part 60, Subpart UUU 40 CFR 60.730 - 60.737 40 CFR 60.732(a)	PE from the collection system egress CB-945 shall not exceed 0.025 grain/dscf (0.057 gram/dscm).
e.	40 CFR Part 60, Subpart UUU 40 CFR 60.730 - 60.737 40 CFR 60.732(b)	Visible PE from the stack serving this emissions unit shall not exceed 10% opacity, as a 6-minute average.
f.	OAC rule 3745-18-06	This emissions unit is exempt from paragraphs (D), (F) and (G) of this rule and from OAC rules 3745-18-07 to 3745-18-94 during any calendar day in which natural gas is the only fuel burned.

(2) Additional Terms and Conditions

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

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the No.2 TiO_2 paste dryer burner (BA-946).

[Authority for term: P0115857 and OAC rule 3745-77-07(A)]

(2) The permittee shall employ the baghouse collection system (FD-946) at all times while the emissions unit is in normal operation.

[Authority for term: P0115857 and OAC rule 3745-77-07(A)]

d) Monitoring and/or Recordkeeping Requirements

(1) For each day during which the permittee burns a fuel other than natural gas in the TiO_2 paste dryer burner (BA-946), the permittee shall maintain a record of the type and quantity of fuel burned, and the sulfur content of the fuel.

[Authority for term: P0115857 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall perform daily checks of the spray dryer egress from the collection system egress (CB-945)using U.S. EPA Reference Method 22 once per 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 as follows: “Yes, there were visible emissions observed” or “No, there were no visible emissions observed”. 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. whether the visible emissions during the observation period were continuous or intermittent; and

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

If visible emissions are present, a visible emission incident has occurred. The permittee shall investigate and document the root cause(s), corrective actions and preventative measures taken, as appropriate, for assuring ongoing compliance with the requirements for visible emissions set forth at 40 CFR 60.11 and 60.732. The observer does not have

to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

Records of each daily visible emission reading using Method 22 and records of causes and corrective actions when visible emissions are observed shall be maintained at the facility for a minimum of two years and must be readily available for review by either U.S. EPA or Ohio EPA.

[Authority for term: P0115857 and OAC rule 3745-77-07(C)(1)]

(3) Notwithstanding the frequency of the inspections specified in section d)(2), the permittee may reduce the frequency for this emissions unit from daily to three days per week if the following conditions are met:

a. for one full quarter the permittee's inspections indicate no visible particulate emissions; and

b. the permittee continues to comply with all the record keeping and monitoring requirements specified in section d).

The permittee shall revert to daily readings if any visible particulate emissions are observed.

[Authority for term: P0115857 and OAC rule 3745-77-07(C)(1)]

(4) The permittee shall collect and record the operating times for the capture (collection) system(s) and the process equipment associated with the emission unit.

[Authority for term: P0115857 and 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 spray dryer egress (CB-945); and

b. describe any corrective actions taken to eliminate the visible particulate emissions.

These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous six-month period.

[Authority for term: P0115857 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall submit reports to U.S. EPA summarizing the daily visible emissions readings, date and time of such readings, any period of observed visible emissions, the cause of any observed visible emissions (i.e., the results of the root cause analyses), any corrective actions taken and any preventative measures implemented, on a semi-annual basis for four six-month periods. The first two reports have already been submitted, and the additional reports are due no later than July 31, 2014, and January 31, 2015.

[Authority for term: P0115857, Administrative Consent Order EPA-5-13-113(a)-OH-05, and OAC rule 3745-77-07(C)(1)]

(3) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the TiO_2 paste dryer burner (BA-946). Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: P0115857 and OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

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

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

Visible PE from the stack serving this emissions unit shall not exceed 10% opacity, as a 6-minute average.

<u>Applicable Compliance Method(s)</u>:

If required, compliance with the opacity limitations shall be determined in accordance with the procedures specified in 40 CFR Part 60, Appendix A, Method 9, OAC rule 3745-17-03(B)(1) and 40 CFR 60.736(b)(2).

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

PE shall not exceed 2.24 lbs/hr.

<u>Applicable Compliance Method(s)</u>:

To determine the actual worst case emission rate for PE, the following equation may be used:

E_PE = summation of [Qa x 528/(Ta + 459.67) x (1-M/100) x (PE_grain load) x (1 lb PE/7000 grains PE) x (60 min/hr)].

where:

E_PE = PE rate, in pounds per hour;

Qa = actual exhaust flow from final egress point (CB-945), 45,000 actual cubic feet per minute (acfm) is maximum design flow as noted in the permit application;

Ta = actual exhaust gas temperature, 300 degrees Fahrenheit, from engineering estimates in the permit application;

M = moisture content of exhaust flow, 24 percent by volume, from engineering estimates in the permit application; and

PE grain load = maximum particulate load from dust control device, 0.01 grains PE/dscf, from baghouse manufacturer specifications as noted in the permit application.

After a performance test is conducted to demonstrate compliance with the hourly PE rate or the grains/dscf PE exhaust gas concentration limit, the measured emission rate during the performance test shall be employed as the compliance method. A Method 5 performance test, employing 2-hour sampling periods, was conducted on June 21, 2004 on this emissions unit, and measured a PE rate of 0.06 lb PE/hr.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

c. Emission Limitation:

PE shall not exceed 9.81 tpy.

Applicable Compliance Method(s):

The annual PE emission rate shall be determined by multiply the actual hourly, worst case emission rate as determined in f)(1)b or f)(1)d, or the most recent performance test that was conducted under representative conditions, by the actual hours of operation, which is the sum of the daily operating hours, as required in the record keeping in (d)(4), for the calendar year, and divided by 2,000 lbs/ton.

d. Emission Limitation:

PE from the collection system egress (CB-945) shall not exceed 0.025 grain/dscf (0.057 gram/dscm).

Applicable Compliance Method(s):

If required, the permittee shall demonstrate compliance with the hourly emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5 and the procedures specified in OAC rule 3745-17-03(B)(10) and 40 CFR 60.736.

e. Emission Limitation:

CO emissions shall not exceed 6.78 lbs/hr.

Applicable Compliance Method(s):

To determine the actual hourly CO emission rate, the following equation may be used:

E_CO = Q x CO x 1ppm/1,000,000 parts x 28 gram CO/mole CO x 1 lb CO/453.59 gram CO x 60 min/hr

where:

E_CO = CO emissions, in pounds per hour;

Q = exhaust flow , which is 23,760 dscf./min, as noted in the application for PTI 02-14024, or the actual exhaust flow determined during the most recent emission test; and

CO = CO concentration in exhaust flow, which is 70 ppm, based upon manufacturer specifications.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

f. Emission Limitation:

CO emissions shall not exceed 29.7 tpy.

Applicable Compliance Method(s):

The annual CO emission rate shall be determined by multiply the actual hourly, worst case emission rate as determined in f)(1)e, or the most recent performance test that was conducted under representative conditions, by the actual hours of operation, which is the sum of the daily operating hours, as required in the record keeping in (d)(4), for the calendar year, and divided by 2,000 lbs/ton.

g. Emission Limitation:

NO_x emissions shall not exceed 4.40 lbs/hr.

Applicable Compliance Method(s):

To determine the actual, hourly NO_X emission rate the following equation may be used:

E_NO_x = Btu/hr x EF

where:

E_NO $_x$ = NO_X emissions, in pounds per hour;

Btu = maximum, hourly heat input, which is 37 mmBtu, based on manufacturer's specification; and

EF = NO_X emission factor, which is 0.108 lb NO_X/mmBtu of actual heat input, based upon manufacturer's specification.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7E. Alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.

h. Emission Limitation:

NO_x emissions shall not exceed 19.3 tpy.

Applicable Compliance Method(s):

The annual NOx emission rate shall be determined by multiply the actual hourly, worst case emission rate as determined in f)(1)g or the most recent performance test that was conducted under representative conditions, by the actual hours of operation, which is the sum of the daily operating hours, as required in the record keeping in (d)(4), for the calendar year, and divided by 2,000 lbs/ton.

[Authority for term: P0115857, OAC rules 3745-15-04 and 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

9. Emissions Unit Group -P015 - #7 ore feed system , P016 - #7 coke feed system, P017 - #8 ore feed system, P018 - #8 coke feed system, P019 - #9 ore feed system, P020 - #9 coke feed system

Operations, Property and/or Equipment Description:

EU ID	Operations, Property and/or Equipment Description
P015	#7 pneumatic ore feed system, including cyclone separator and 1,200 cfm baghouse
P016	#7 pneumatic coke feed system, including cyclone separator and 1,200 cfm baghouse
P017	#8 pneumatic ore feed system, including cyclone separator and 1,200 cfm baghouse
P018	#8 pneumatic coke feed system, including cyclone separator and 1,200 cfm baghouse
P019	#9 pneumatic ore feed system, including cyclone separator and 1,200 cfm baghouse
P020	#9 pneumatic coke feed system, including cyclone separator and 1,200 cfm 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 operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(E) (P0103915 effective 10/28/2008)	Particulate emission (PE) shall not exceed 1.36 TPY. See b)(2)a.
b.	OAC rule 3745-17-11(B)	PE shall not exceed 41.6 lbs/hr (based on Table I and a process weight rate of 36 tons/hr).
c.	OAC rule 3745-17-07(A)	Visible PE from the stack serving this emissions unit shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
d.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)b.

(2) Additional Terms and Conditions

a. This permit-to-install takes into account the use of a cyclone separation (product collection) system and a 1,200 cfm baghouse system, whenever this air contaminant source is in operation, with a minimum overall control efficiency of

99.5% as a voluntary restriction as proposed by the permittee for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3).

b. This emissions unit is a pollutant specific emissions unit for PM according to 40 CFR Part 64 and has developed a CAM plan.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a CAM plan for emissions units P015 through P020. The permittee shall comply with the provisions of the CAM plan during any operation of the aforementioned emissions units.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform weekly checks of the stack serving this emissions unit, 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. whether the visible emissions during the observation period were continuous or intermittent; and

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

[Authority for term: P0103915 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall maintain daily records that document any time periods when the 1200 cfm baghouse was not in service when the emissions unit was in operation.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) The CAM plan for this emissions unit has been developed for particulate matter emissions. The CAM performance indicator for particulate matter emissions is weekly checks of the stack for any visible particulate matter emissions, and daily records that document when the 1200 cfm baghouse was not in service when the emissions unit was in operation.

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

(4) When the emissions unit is operating outside the indicator ranges, 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 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 CAM plan.

If a CAM indicator is outside of the designated range for more than 5% of the operating time for a reporting period, the Director may require a Quality Improvement Plan for that CAM indicator in accordance with 40 CFR 64.8.

If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance, the permittee shall promptly notify the Ohio EPA Northeast District Office, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

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

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 minimize or eliminate the visible particulate emissions.

These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous six-month period.

[Authority for term: P0103915 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall notify the Ohio EPA Northeast District Office in writing of any daily record showing that the 1200 cfm baghouse was not in service when the emissions unit was in operation. The notification shall include a copy of such record and shall be sent to the Ohio EPA Northeast District Office within 30 days after the event occurs.

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

f) Testing Requirements

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

a. Emission Limitation:

PE shall not exceed 41.6 lbs/hr (based on Table I and a process weight rate of 36 tons/hr).

Applicable Compliance Method:

Compliance shall be based on a conservative grain loading of 0.03 gr/dscf and a flow rate of 1,200 cfm for the baghouse (0.31 lb/hr). If required, stack testing using Methods 1 through 5 of 40 CFR Part 60, Appendix A shall be used to determine compliance.

b. Emission Limitation:

PE shall not exceed 1.36 tpy.

Applicable Compliance Method:

The tpy emission limitation was developed by multiplying the particulate emission factor (0.31 lb/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. No stack testing to determine the validity of the 0.31 lb/hr emission factor is required provided there are no visible emissions observed from the stack.

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 the rule.

Applicable Compliance Method:

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

[Authority for term: P0103915, OAC rules 3745-15-04 and 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

10. P903, Coke and Ore Unloading, Storage, and Handling

Operations, Property and/or Equipment Description:

Ore and coke unloading, storage and handling operations: including coke/ore unloading hopper (FE-208) and coke/ore conveyors & bucket elevators, all of which have fugitive egress points. Storage silos (FE-201-1, FE-201-2, FE-201-3 & FE-201-4) with baghouse FG-701A, and storage silo FE-202 with bin vent collector FG-701B, all of which have stack egress points

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

Ore & coke unloading, storage and handling operations: including coke/ore unloading hopper (FE-208) and coke/ore conveyors & bucket elevators, all of which have fugitive egress points:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-17-07(B)(1)	Visible particulate emissions (PE) from any fugitive egress shall not exceed 20% opacity as a 3-minute average.
b.	OAC rule 3745-17-08(B)	Reasonably available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust shall be employed. See b)(2)a through b)(2)b.
c.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)e.

Storage silos (FE-201-1, FE-201-2, FE-201-3 & FE-201-4) with baghouse FG-701A, and storage silo FE-202 with bin vent collector FG-701B, all of which have stack egress points:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	OAC rule 3745-17-07(A)(1)	Visible PE from any stack egress shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
e.	OAC rule 3745-17-11	PE shall not exceed 6.2 lbs/hr.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)e.

(2) Additional Terms and Conditions

a. The material handling operation(s) that are covered by this permit and subject to the requirements of OAC rules 3745-17-07 and 3745-17-08 are listed below:

rail car bottom dumping

truck dumping

under-pile gravity load-out (FE-208) to conveyor (JD-201)

belt conveyors (JD-201, JD-202, JD-204 and JD-200)

pneumatic equipment (FE-713, FE-715, FE-716A/B, FE-714, FE-712, FE-718 and FE-711)

bucket elevator conveyor (JD-203)

b. The permittee shall employ reasonably available control measures for the above-identified material handling operation(s) for the purpose of ensuring compliance with the above-mentioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to perform the following control measure(s) to ensure compliance:

material handling operation(s)	**control measure(s)**
rail car bottom dumping and truck dumping	partial enclosure
under-pile gravity load-out to conveyor (FE-208), bucket elevator conveyor (JD-201)	total enclosure
belt conveyors (JD-201, JD-202, JD-204 and JD-200)	total enclosure
pneumatic equipment (FE-713, FE-715, FE-716A/B, FE-714, FE-712, FE-718 and FE-711)	total enclosure
bucket elevator conveyor (JD-203)	total enclosure
storage silos (FE-201-1, FE-201-2, FE-201-3 and FE-201-4)	directing displaced exhaust gases to baghouse FG-701A

storage silo (FE-202)	directing displaced exhaust gases to bin vent collector FG-701B

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

c. The above-identified control measures shall be implemented at all times to ensure compliance with the above-mentioned control requirements and visible emission limitations.

d. Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the requirements of OAC rule 3745-17-08.

e. This emissions unit is a pollutant specific emissions unit for PM according to 40 CFR Part 64 and has developed a CAM plan.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a CAM plan for emissions units P903. The permittee shall comply with the provisions of the CAM plan during any operation of the aforementioned emissions units.

c) Operational Restrictions

(1) The permittee shall employ baghouse FG-701A whenever material is transferred to storage silos FE-201-1, FE-201-2, FE-201-3 and FE-201-4.

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

(2) The permittee shall employ bin vent collector FG-701B whenever material is transferred to storage silo FE-202.

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

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the baghouse FG-701A stack egress, and the bin vent collector FG-701B stack egress.

The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the rail car bottom dumping and truck dumping area associated with 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 location and color of the emissions;

b. whether the emissions are representative of normal operations;

c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;

d. whether the visible emissions during the observation period were continuous or intermittent; and

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

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit).

With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(2) The permittee shall maintain daily records that document any time periods when baghouse FG-701A was not in service when material was transferred to storage silos FE-201-1, FE-201-2, FE-201-3 and FE-201-4.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(3) The permittee shall maintain daily records that document any time periods when bin vent collector FG-701B was not in service when material was transferred to storage silo FE-202.

[Authority for term: OAC rule 3745-77-07(C)(1)]

(4) The CAM plan for this emissions unit has been developed for particulate matter emissions. The CAM performance indicators for particulate matter emissions are evaluation of the fugitive PM capture system integrity, visual observation of the two control device egress points, and visual observations of the truck dumping area.

a. The fugitive PE capture system integrity indicator is no visible emissions from the bucket elevator building or enclosure. The frequency of monitoring is once per week while the process is in operation.

b. The visible fugitive particulate emissions from the truck unloading is consistent with the monitoring in d)(1) above. The frequency of monitoring is once per day while the process is in operation.

c. The visible particulate emissions indicator from baghouse FG-701A is no visible emissions from the exhaust egress. The frequency of monitoring is once per day while the process is in operation.

d. The visible particulate emissions indicator from the bin vent collector FG-701B is no visible emissions. The frequency of monitoring is once per day while the process is in operation.

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

(5) When the emissions unit is operating outside the indicator ranges, 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 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 CAM plan.

If a CAM indicator is outside of the designated range for more than 5% of the operating time for a reporting period, the Director may require a Quality Improvement Plan for that CAM indicator in accordance with 40 CFR 64.8.

If the permittee identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance, the permittee shall promptly notify the Ohio EPA Northeast District Office, and if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, re-establishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

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

e) Reporting Requirements

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

a. any weekly observation during which any visible fugitive particulate emissions were observed from the bucket elevator building or enclosure;

b. all days during which any visible particulate emissions were observed from the baghouse FG-701A stack egress;

c. all days during which any visible particulate emissions were observed from the bin vent collector FG-701B stack egress serving this emissions unit;

d. all days during which any abnormal visible particulate emissions were observed from the rail car bottom dumping and truck dumping area serving this emissions unit;

e. any corrective actions taken to minimize or eliminate the abnormal visible fugitive particulate emissions from the rail car bottom dumping and truck dumping area and the results of such corrective actions; and

f. any corrective actions taken to eliminate the visible particulate emissions from baghouse FG-701A stack egress and bin vent collector FG-701B stack egress.

These reports shall be submitted to the Ohio EPA Northeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.

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

(2) The permittee shall notify the Northeast District Office in writing of any daily record showing that any of the following control equipment was not in service:

a. baghouse FG-701A when material was transferred to storage silos FE-201-1, FE-201-2, FE-201-3 and FE-201-4; and

b. bin vent collector FG-701B when material was transferred to storage silo FE-202.

The notification shall include a copy of such record and shall be sent to the Northeast District Office within 30 days after the event occurs.

[Authority for term: OAC rule 3745-77-07(C)(1)]

f) Testing Requirements

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

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

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

<u>Applicable Compliance Method</u>:

If required, compliance shall be determined through visible particulate 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).

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

Visible PE from any fugitive egress shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible particulate 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)(3).

c. Emission Limitation:

PE shall not exceed 6.2 lbs/hr from all egress points.

Applicable Compliance Method:

Compliance may be based upon the following equations:

i. Determination of the worst case PE rate from the coke/ore unloading hopper:

E(UL) = [(EF_coke x PR_coke) +(EF_ore x PR_ore)] x (1 - CE)

where:

E(UL) = maximum PE rate from coke and ore unloading operations, in pounds per hour;

EF_coke = emissions factor for PE, which is 0.027 lb PE/ton coke as specified in AP-42, Table 11.9-4, chapter 11.9 (7/98);

EF_ore = emissions factor for PE, which is 0.12 lb PE/ton ore as specified in AP-42, Table 11.24-2, chapter 11.24 (8/82);

PR_coke = maximum coke process rate, which is 60 tons coke/hr;

PR_ore = maximum ore process rate, which is 60 tons ore/hr; and

CE = control efficiency of partial enclosure, may be 80% for an enclosure at a load-in operation, Table 2.1.2-8, Reasonably Available Control Measures for Fugitive Dust Sources, Ohio EPA, September, 1980, page 2-47.

ii. Determination of the worst case PE rate from the coke and ore storage silos:

E(S) = [(Conc_PEa x Qa) + (Conc_PEb x Qb)] x 1 lb PE/7000 grains PE x 60 min/hr

where:

E(S) = the PE rate from the storage silos, in pounds per hour;

Conc_PEa = Conc_PEb = maximum concentration of PE in baghouse FG-701A exhaust and in baghouse FG-701B, which are 0.03 grain

PE/dscf, per engineering estimates noted in the potential to emit analysis, Plant2EI.xls; and

Qa = Qb = exhaust flow rate of baghouse FG-701A and of baghouse FG-701B, which is 600 dscfm as noted in Millennium's memo of June 21, 2000.

iii. Determination of total PE rate:

E(T) = E(UL) + E(S)

where:

E(T) = the total PE rate.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with 40 CFR Part 60, Appendix A, Methods 1 through 5.

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1)]

g) Miscellaneous Requirements

a. None.