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

7/21/2014

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 1
Facility ID: 0204010200
Permit Type: Renewal
Permit Number: P0111873

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) 644-3631 by the end of the 45 day review period if you wish to object to the proposed permit.

Sincerely,

Michael W. Ahern, 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 1

Facility ID:	0204010200
Permit Number:	P0111873
Permit Type:	Renewal
Issued:	7/21/2014
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 1

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Authorization

Facility ID:	0204010200
Facility Description:	Manufacturer of titanium dioxide
Application Number(s):	A0035621, A0038440, A0045429, A0049521
Permit Number:	P0111873
Permit Description:	Renewal of Title V operating permit for the equipment used in the manufacturer of titanium dioxide
Permit Type:	Renewal
Issue Date:	7/21/2014
Effective Date:	To be entered upon final issuance
Expiration Date:	To be entered upon final issuance
Superseded Permit Number:	P0084099

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

Cristal USA Inc., Ashtabula Complex Plant 1
2900 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

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

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

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

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

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

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

c) The permittee shall submit progress reports to the Ohio EPA DAPC, 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 the Plant 1 and Plant 2 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 CO 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 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:

nissions Unit	CO (lbs/hr)	COS (lbs/hr)
01 at Plant 1	6,248.68	315.46
06 at Plant 1	15.89	1.69
02 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 PTI P0108818

a) Operating Restrictions

(1) None

b) Monitoring and Recordkeeping

(1) For a period of 10 years following completion of this project permitted under PTI P0108818, the permittee shall calculate and maintain a record of post-change actual annual emissions for PM_{10}, CO, VOC, TRS and CO_{2e}, in tons per year, for the following sources combined:

ID	Description	PM_{10}	CO	VOC/TRS	CO_{2e}
P001	'A' Chlorination Process	x	x	x	x
P002	27.5 MMBTU/hr Spray Dryer 'A'	x	x	x	x
P006	'B' Chlorination Process	x	x	x	x
P007	50 MMBTU/hr Spray Dryer 'B'	x	x	x	x
P010	$TiCl_4$ Vaporizer and Oxygen 'B' Preheater	x	x	x	x
P011	$TiCl_4$ Vaporizer and Oxygen 'A' Preheater	x	x	x	x
P050	#2 Filter Feed Tank	x			
P023	"A" Treatment Tanks	x			
P901	Ore/Coke unloading/handling	x			
S018	#1 Rotary Drum Vacuum Filter and Receiver	x			
S019	#2 Rotary Drum Vacuum Filter and Receiver	x			
S020	#3 Rotary Drum Vacuum Filter and Receiver	x			
S021	#4 Rotary Drum Vacuum Filter and Receiver	x			
S022	#5 Rotary Drum Vacuum Filter and Receiver	x			
S023	#6 Rotary Drum Vacuum Filter and Receiver	x			
S024	#7 Rotary Drum Vacuum Filter and Receiver	x			
T004	Toluene Storage Tanks for Train B			x	
T045	#1 Blend Tank	x			
T046	#2 Blend Tank	x			
T047	#3 Blend Tank	x			
T048	#4 Blend Tank	x			
T049	#5 Blend Tank	x			
P028	#4 Haver packer	x			
P029	#5 Haver packer	x			
P030	#6 Haver packer	x			
P031	#1 semi-bulk	x			
P032	#2 Semi-bulk	x			
P033	#3 Semi-bulk	x			
	Packer Dust Collector	x			

If during this project additional de minimus and permit exempt emissions units (finishing equipment, packaging equipment, storage tanks, etc.) are installed or modified and the change is involved in this project, the change in emissions unit shall be added to the list above.

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 completion of the project as provided in the application for the Cristal USA, Inc. Plant 1 air permit to install P0108818. The permittee's application indicated that these pollutants

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: P0108818 and OAC rules 3745-31-10 and 3745-77-07(C)(1)]

c) Reporting

(1) For a period of 10 years following completion of this project, 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, P002, P006, P007, P901 and all other de minimus and permit exempt emissions units involved in this project (finishing equipment, packaging equipment, storage tanks) 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: P0108818 and OAC rules 3745-31-10 and 3745-77-07(C)(1)]

5. 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 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)]

6. PM-10 emissions.

PM-10 emissions limitations included in the terms and conditions of this permit for emissions units P002, P006 and P007 include both filterable and condensable fractions. Upon permit issuance, Reference Methods 201A and 202 shall apply to testing of PM-10 emissions for PSD and/or NNSR applicability purposes. Ohio EPA recognizes the absence of Method 201A/202 test data prior to 2012, and an estimate of condensable particulate emissions, from the baseline actual emissions for the equipment and process changes referred to as the growth project. Ohio EPA will account for differences in baseline and post-project actual annual average PM-10 emissions in a consistent and reasonable manner.

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

7. 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: P010 and P011. These emissions units 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)]

8. 40 CFR Part 63, Subpart ZZZZ, Stationary Reciprocating Internal Combustion Engines MACT

c) The following emissions units contained in this permit are subject to 40 CFR Part 63, Subpart ZZZZ: B010, P014, P015 and P034.

Emissions unit P014 is an existing, emergency CI RICE less than 500 hp located at a major source for HAP with a compliance date of May 3, 2013.

Emissions unit P015 is an existing, emergency SI RICE less than 500 hp located at a major source for HAP with a compliance date of October 19, 2013.

Emissions unit P034 is a new 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 60.6590(c)(6), and must comply upon startup.

Emissions unit B010 is a new affected source greater than 500 hp located at a major source for HAP with no applicable requirements according to 40 CFR 63.6590(b)(3)(i), that must comply upon startup.

d) 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)]

9. 40 CFR Part 60, Subpart IIII, Stationary Compression Ignition Internal Combustion Engines NSPS

a) The following emissions unit contained in this permit is subject to 40 CFR Part 60, Subpart IIII: B010

Emissions unit B010 is a pre-2007, stationary CI emergency ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder rated at 690 HP.

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 IIII and OAC rule 3745-77-07(C)(1)]

10. 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: P034.

Emissions unit P034 is a new emergency SI RICE less than 500 hp located at a major source of HAP complies by complying with 40 CFR Part 60, Subpart JJJJ for spark ignition engines, according to 40 CFR 60.6590(c)(6), that must comply upon startup.

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)]

11. 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:

B010	690 HP (515 Kw) Kohler Diesel Emergency Generator	PBR01015
P008	Lime Neutralization Process	P0106466
P014	130 HP Cummins Diesel Emergency Fire Pump (PMA-4008)	PBR08535
P015	135 HP Kohler NG Electrical Emergency Generator Outfall Sump	PBR08536
P034	Kohler 60REZGB 80 hp (60 kW) natural gas-fired emergency electrical power generator set	PBR10278
S001	Storage Silo #1 in TiO2 Slip System, SIL-2904	PTI 02-285
S002	Storage Silo #2 in TiO2 Slip System, SIL-2905	PTI 02-285
S003	Storage Silo #3 in TiO2 Slip System, SIL-2906	PTI 02-285
S004	Weigh Hopper in TiO2 Slip System, HOP-2908	PTI 02-285
S005	Dispersion Tank #1 in TiO2 Slip System, TNK-2911	PTI 02-285
S006	Dispersion Tank #2 in TiO2 Slip System, TNK-2912	PTI 02-285
S007	25,000-Gal TiO2 Slurry Product Storage Tank East, TNK-2921	PTI 02-285
S008	25,000-Gal TiO2 Slurry Product Storage Tank West, TNK-2922	PTI 02-285
T003	15,000-Gal Toluene Storage Tank for BFeed, TNK-5914	PTI 02-4450 Mod 8/4/1999
P020	Lime slaker #1 for the lime neutralization process.	PTI 02-08565
P021	Lime slaker #2 for the lime neutralization process.	PTI 02-08565

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

C. Emissions Unit Terms and Conditions

1. F001, Roadways and Parking Lots

Operations, Property and/or Equipment Description:

Paved and unpaved roadways and parking lots

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

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

No visible particulate emissions except for 6 minutes during any 60-minute period from the paved roadways and parking areas.

<u>Applicable Compliance Method</u>:

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 3745-77-07(C)(1)]

b. Emission Limitation:

No visible particulate emissions except for 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 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

2. P001, Chlorination A Process

Operations, Property and/or Equipment Description:

Train "A" Chlorination process: including two chlorinators (CHL-1202 and CHL-5203), two cyclones (CYC-1202 and CYC-5203) and two condensers (CND-1211 and CND-1212) with a demister (MEL-1212), a spray tower wet scrubber (TWR-1305), a venturi scrubber (SBR-1305), a separator (SEP-1315) and a packed tower scrubber (TWR-1320) that are used to control normal production emissions via P001STK1310 egress.

(In addition a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375) and a separator tower (SEP-5380) are used to control emissions during maintenance operations via the STK-SNAKE egress. A venturi scrubber (SBR-0100) and a separator (SEP-0101) are used to control emissions during cold startup operations via STK-0102 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) d)(13), d)(14), d)(15) and e)(6)

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 3745-17-07(A)(1)	Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
b.	OAC rule 3745-17-11(B)	Particulate emissions (PE) shall not exceed 33.0 lbs/hr. See b)(2)a.
c.	OAC rule 3745-18-06(E)(2)	Sulfur dioxide (SO_2) emissions shall not exceed 242 lbs/hr. See b)(2)b and b)(2)e.
d.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)d.

(2) Additional Terms and Conditions

a. The allowable, hourly PE rate is based on Table I 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 by emissions testing or by using emissions factors.

b. The following control equipment is used to control emissions during maintenance operations at this emissions unit and also to control emissions during maintenance operations at Train "B" Chlorination Process (P006): a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375) and a separator tower (SEP-5380).

c. The following control equipment is used to control emissions during startup operations at this emissions unit and also to control emissions during startup operations at Train "B" Chlorination Process (P006): a venturi scrubber (SBR-0100) and a separator (SEP-0101). This system is capable of ventilating the system during maintenance when the emissions unit is not in operation.

d. This emissions unit is a pollutant specific emissions unit for PE and SO_2 according to 40 CFR Part 64 and has developed a CAM plan for PM_{10} and SO_2.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a compliance assurance monitoring (CAM) plan for emissions unit P001. The permittee shall comply with the provisions of the plan during any operation of the aforementioned emissions unit.

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

c) Operational Restrictions

(1) The permittee shall employ the venturi scrubber SBR-1305 whenever the emissions unit is in operation except during startup, shutdown, maintenance, malfunction, or calibration periods.

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

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 a 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-1305 when the source was in operation, including the start time and date and end time and date.

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

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

a. the venturi scrubber SBR-1305 liquid flow rate, in gallons per minute, during operation of this emissions unit, except for periods of startup, shutdown, maintenance, malfunction, or calibration periods;

b. the venturi scrubber SBR-5375 liquid flow rate, in gallons per minute, during operation of this emissions unit in normal and/or maintenance operation except during startup, shutdown, maintenance, or calibration periods; and

c. the venturi scrubber SBR-0100 liquid flow rate, in gallons per minute, while the emissions unit is in cold startup operation.

[Authority for term: P0108818 and 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 scrubber on a once per 12-hour shift basis.

For purposes of this condition, the optimum ranges for:

a. the main process control system venturi scrubber (SBR-1305) liquid flow rate as a one 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 control system venturi scrubber (SBR-5375) liquid flow rate as a one 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; and

c. the startup control system venturi scrubber (SBR-0100) liquid flow rate as a one 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: P0108818 and 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: P0108818 and 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

emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor modification.

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

(8) The CAM plan for this emissions unit has been developed for particulate emissions. The CAM performance indicators for particulate emissions are the scrubbing liquid flow rate to the main process control system venturi scrubber (SBR-1305), the maintenance control system venturi scrubber (SBR-5375), and the startup control system venturi scrubber (SBR-0100), as specified below:

a. The venturi scrubber SBR-1305 liquid flow rate, in gallons per minute as a one hour average, during operation of this emissions unit is not be less than the minimum value established during the most recent emissions test that demonstrated that the emissions unit was in compliance except for periods of startup, shutdown, maintenance, malfunction, or calibration periods;

b. The venturi scrubber SBR-5375 liquid flow rate, in gallons per minute as a one hour average, during operation of this emissions unit in normal and/or maintenance 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 except during startup, shutdown, maintenance, or calibration periods; and

c. The venturi scrubber SBR-0100 liquid flow rate, in gallons per minute as a one hour average is not less than the manufacturer's recommended operating value 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 caustic addition rate of the main process control system venturi scrubber (SBR-1305) as specified below:

a. the venturi scrubber (SBR-1305) caustic addition rate to the scrubbing liquid as a 3-hour average, while employing $TiCl_4$ pourback in this emissions unit shall be not less than 0.2 gallon per minute until such time that appropriate caustic addition rate is determined through plant testing; and

b. the venturi scrubber (SBR-1305) scrubbing liquid flow rate, in gallons per minute as a one-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 $TiCl_4$ pourback process is 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.

(13) The application for these emissions units, P001 and P006, combined, was evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant with an increase over one ton per year using an air dispersion model SCREEN3 The predicted 1-hour maximum ground-level concentration results from the approved air dispersion model, were compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

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

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

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

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

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

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

d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year):

Toxic Contaminant:	CS_2 CAS 75-15-0	HCl
TLV (mg/m3):	3.108	2.194
Maximum Hourly Emission Rate (lbs/hr):	4.875	2.025
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):	16.39	6.81
MAGLC (ug/m3):	74	52

The permittee, has demonstrated that emissions of CS_2 and HCl, from emissions units P001 and P006, combined were calculated to be less than eighty per cent of the MAGLC; any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

[Authority for term: P0108818, ORC 3704.03(F) and OAC rule 3745-77-07(C)(1)]

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

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

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

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

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

"modification", the permittee shall apply for and obtain a final permit to install prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

[Authority for term: P0108818, ORC 3704.03(F) and OAC rule 3745-77-07(C)(1)]

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

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

b. the MAGLC for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);

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

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

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

[Authority for term: P0108818, ORC 3704.03(F) and OAC rule 3745-77-07(C)(1)]

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 (SBR-1305) liquid flow rate was lower than the recommended minimum from above;

b. each period of time (start time and date, and end time and date) during cold startup operation when the venturi scrubber (SBR-0100) liquid flow rate was lower than the recommended minimum from above;

c. each period of time (start time and date, and end time and date) during maintenance operation when venturi scrubber (SBR-5375) liquid flow rate was lower than the recommended minimum from 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: P0108818 and OAC rule 3745-77-07(C)(1)]

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

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

(4) Within thirty (30) days following the end of each calendar quarter, the permittee shall submit quarterly 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: P0108818 and 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.

(6) The permittee shall submit annual reports that include any changes to any parameter or value used in the dispersion model used to demonstrate compliance with the Toxic Air Contaminate Statute, ORC 3704.03(F), through the predicted 1 hour maximum concentration. The report should include:

a. the original model input;

b. the updated model input;

c. the reason for the change(s) to the input parameter(s);

d. a summary of the results of the updated modeling, including the input changes; and

e. a statement indicating if the updated model results indicate that the 1-hour maximum ground-level concentration is less than 80% of the MAGLC.

If no changes to the emissions, emissions unit(s), or the exhaust stack have been made during the reporting period, then the report shall include a statement to that effect.

[Authority for term: P0108818, ORC 3704.03(F) 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 particulate emissions 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 demonstrated through visible particulate emission observations performed in accordance with the methods and procedures specified in 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 33.0 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly emission limitation through emission tests performed in accordance with the methods and procedures specified in 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 242 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly emission limitation through emission tests performed in accordance with the methods and procedures specified in 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: P0108818 and OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

3. P002, Spray Dryer A.

Operations, Property and/or Equipment Description:

Train A Finishing process: including a TiO2 paste feed tank (TNK-2501), TiO2 paste dryer (DRY-2505), and a nominal 24 mmBtu/hr natural gas fired burner (BRN-2508) with two baghouses (BAG-2515 and BAG-2520) 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 3745-17-07(A)	Visible particulate emissions (PE) from any stack serving this emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
b.	OAC rule 3745-17-11	PE shall not exceed 19.2 lbs/hr. The allowable, hourly PE rate is based on Table 1 in OAC rule 3745-17-11.

(2) Additional Terms and Conditions

a. Emissions unit P002 is considered an existing source since it was installed in 1968. This emissions unit is not subject to OAC rule 3745-31-05(A)(3).

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the TiO_2 paste dryer burner (BRN-2508).

[Authority for term: P0106447 and OAC rule 3745-77-07(A)]

(2) The permittee shall employ the two baghouse collection system (BAG-2515, BAG-2520) at all times while the emissions unit is in normal operation. The baghouse collection system operates as a product collection device and inherently cannot be bypassed; therefore, no monitoring, recordkeeping or reporting of the operating time of the baghouse collection device is required.

[Authority for term: 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 TiO2 paste dryer burner (BRN-7508), the permittee shall maintain a record of the type and quantity of fuel burned, and the sulfur content of the fuel.

[Authority for term: P0106447 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall perform daily checks of the spray dryer STK-2535 egress, 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: P0106447 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 STK-2535 egress 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 6-month period.

[Authority for term: P0106447 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 (BRN-2508). Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: P0106447 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 the methods and procedures specified in 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 19.2 lbs/hr.

Applicable Compliance Method:

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

E_PE = 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 the final egress point (STK-2535), in dry standard cubic feet per minute (dcfm), measured during the most recent, representative stack test conducted at maximum capacity;

PE grain load = maximum particulate load from the final egress point (STK-2535), in grains PE/dscf, measured during the most recent, representative stack test conducted at maximum capacity;

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 the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5.

[Authority for term: P0106447 and OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

4. P006, Chlorination B Process

Operations, Property and/or Equipment Description:

Train "B" Chlorination Process: including two chlorinators (CHL-5201, CHL-5203), two cyclones (CYC-5201, CYC-5203), a quench column (CND-5208), two condensers (CND-5211, CND-5212) with a mist eliminator (MEL-5212), a spray tower wet scrubber (TWR-5300), a venturi scrubber (SBR-5305), which controls PE, a separator tower (SEP-5310) followed by a 17.6 mmBtu/hr natural gas fired thermal convertor (BRN-5330), which controls CO and OC emissions and which transfers heat to a heat recovery boiler, and a water quench with a packed column caustic scrubber mist eliminator (SBR-5390), which controls H_2SO_4 mist emissions during normal operations via a stack egress (STK-5355)

In addition a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375), which controls PE, and a separator tower (SEP-5380) are used during maintenance operations via a stack egress (STK-SNAKE). A venturi scrubber (SBR-0100), which controls PE, and a separator tower (SEP-0101) are used during cold startup or during maintenance activities.

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)(9), d)(10), d)(11), d)(12) and e)(8)

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	ORC 3704.03(T) [PTI P0108818 effective 4/6/2012]	Sulfur dioxide (SO_2) emissions shall not exceed 8.90 lbs/hr. See b)(2)k. Carbon monoxide (CO) emissions shall not exceed 15.89 lbs/hr. Hydrogen chloride (HCl) emissions shall not exceed 3.79 lbs/hr.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001 [PTI P0108818 effective 4/6/2012]	Filterable particulate matter (PM) /particulate matter (PM_{10}) less than 10 microns in diameter/ particulate matter ($PM_{2.5}$) less than 2.5 microns in diameter shall not exceed 1.25 lbs/hr and 5.48 tpy. Nitrogen oxides (NO_x) shall not exceed 0.64 lb/hr and 2.80 tpy.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		Carbonyl sulfide (COS)/volatile organic compound (VOC) emissions shall not exceed 1.69 lbs/hr and 7.40 tpy. The requirements of this rule include compliance with OAC rule 3745-17-07(A)(1). See b)(2)b through b)(2)e and b)(2)j. See b)(2)h.
c.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/2006 [PTI P0108818 effective 4/6/2012]	See b)(2)a through b)(2)d. See b)(2)i.
d.	OAC rule 3745-31-10 - OAC rule 3745-31-20 40 CFR Part 52, Section 52.21	Sulfuric acid mist (H_2SO_4) emissions shall not exceed 4.50 lbs/hr and 19.71 tpy. See b)(2)e.
e.	OAC rule 3745-17-07(A)(1)	Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
f.	OAC rule 3745-17-11(B)	Particulate emissions (PE) shall not exceed 37.0 lbs/hr. See b)(2)f. The emission limitation specified in this rule is currently less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) as effective November 30, 2001. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the Ohio State Implementation Plan, the PE limitation of 37.0 lbs/hr of exhaust gases shall apply.
g.	OAC rule 3745-18-06(E)(2)	The requirements established pursuant to this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3) and OAC rule 3745-31-10 through OAC rule 3745-31-20.
h.	40 CFR Part 64 Compliance Assurance Monitoring (CAM)	See b)(2)g.

(2) Additional Terms and Conditions

a. Methane injection must be employed to control chlorine emissions from a chlorine release that occurs during a safety bypass of the thermal converter (BRN-5330) and the caustic scrubber (SBR-5390).

b. The following control equipment is used to control emissions during maintenance operations at this emissions unit and also to control emissions during maintenance operations at Train "A" Chlorination Process (P001): a scrubber spray tower (TWR-5370), a venturi scrubber (SBR-5375) and a separator tower (SEP-5380).

c. The following control equipment is used to control emissions during startup operations at this emissions unit and also to control emissions during startup operations at Train "A" Chlorination Process (P001): a venturi scrubber (SBR-0100) and a separator (SEP-0101).

d. A safety bypass around the thermal converter was incorporated as part of the original Plant design of the B train chlorination system. The function of the safety bypass is to route combustible gases from chlorination around the thermal converter during a flame out, directly to the exhaust stack. A catastrophic explosion could occur if combustible gases were allowed to enter a hot vessel without a flame to ensure complete combustion.

A Preventative Maintenance Malfunction Abatement Plan (PMMAP) has been prepared and approved by Ohio EPA for the B train thermal converter. It outlines the procedures employed to minimize emissions that result from the use of the safety bypass. A safety bypass will not be considered a malfunction or deviation for Title V reporting so long as the approved PMMAP is followed. The pound per hour limit for CO is representative of normal operation and shall not apply during startup, shutdown, or safety bypass. If a safety bypass event occurs and the PMMAP is not followed, it will be considered a deviation for purposes of Title V reporting. A call shall be made to Ohio EPA's Northeast District Office within 24 hours of the occurrence to report a malfunction per OAC rule 3745-15-06. The permittee shall maintain records of safety bypass emissions estimates.

e. Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has been determined that no additional air pollution controls are required to control H_2SO_4. The emission limitations based on the BACT requirements are listed under OAC rules 3745-31-10 thru 20 above.

f. The allowable, hourly PE rate is based on Table I 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 by emissions testing or by using emissions factors.

g. This emissions unit is a pollutant specific emissions unit for PE, CO and VOC according to 40 CFR Part 64 and the permittee has developed a CAM plan.

Pursuant to 40 CFR Part 64, the permittee has submitted and the Ohio EPA has approved a compliance assurance monitoring (CAM) plan for emissions unit P006. The permittee shall comply with the provisions of the plan during any operation of the aforementioned emissions units.

h. The permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio.

Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, then these emission limitations/control measures no longer apply.

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the NO_x emissions from this air contaminant source since the uncontrolled potential to emit for these emissions are less than 10 tons per year.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the $PM_{10}/PM_{2.5}$and COS/VOC emissions from this air contaminant source since the after control potential to emit for these emissions are each less than 10 tons per year.

j. Best Available Technology (BAT) for $PM_{10}/PM_{2.5}$ includes the filterable fraction and the condensable fraction of particulate emissions. However, when this permit was issued, no data was available to determine the condensable fraction. Therefore, the listed BAT emission limit only includes the filterable fraction. This limit may be adjusted to include both filterable and condensable fractions of particulate once the post permit emissions testing is completed. The existing control scenario as described in this permit has been determined to meet BAT for the combination of filterable and condensable $PM_{10}/PM_{2.5}$.

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

c) Operational Restrictions

(1) The permittee shall employ the venturi scrubber SBR-5305, the thermal convertor BRN-5330 and the water quench with a packed column caustic scrubber mist eliminator SBR-5390 whenever the emissions unit is in operation except during startup, shutdown, maintenance, malfunction, calibration periods or safety bypass events.

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

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-5305 when the source was in operation, including the start time and date and end time and date.

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

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

a. the venturi scrubber SBR-5305 liquid flow rate, in gallons per minute, during operation of this emissions unit, except for periods of startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

b. the thermal convertor BRN-5330 average combustion temperature, in degrees Fahrenheit (or Celsius), during operation of this emissions unit, except for periods of startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

c. the thermal convertor BRN-5330 average secondary air excess oxygen, in percent as a 3-hour average, during operation of this emissions unit, except for periods of startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

d. the packed column caustic scrubber mist eliminator SBR-5390 20% caustic solution flow rate, in gallons per minute, during operation of this emissions unit, except for periods of startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

e. the venturi scrubber SBR-5375 liquid flow rate, in gallons per minute, during operation of this emissions unit in normal and/or maintenance operation except during startup, shutdown, maintenance, or calibration periods; and

f. the venturi scrubber SBR-0100 liquid flow rate, in gallons per minute, while the emissions unit is in cold startup operation.

[Authority for term: P0108818 and 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 scrubber on a once per 12-hour shift basis.

For purposes of this condition, the optimum ranges for:

a. the main process control system venturi scrubber (SBR-5305) 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, calibration periods, or safety bypass events;

b. the thermal converter (BRN-5330) average combustion temperature is any 3-hour block of time, of not less than 1,350 degrees Fahrenheit (762 degrees Celsius) as outlined in the PMMAP except during startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

c. the thermal convertor (BRN-5330) average secondary air excess oxygen, in percent as a 3-hour average, is not more than average value established during the most recent emissions test that demonstrated that the emissions unit was in compliance, except for periods of startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

d. the packed column caustic scrubber mist eliminator (SBR-5390) 20% caustic flow rate 1-hour average is at or above 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 except during startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events;

e. the maintenance process control system venturi scrubber (SBR-5375) liquid flow rate1-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; and

f. the startup control system venturi scrubber (SBR-0100) liquid flow rate as a one 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: P0108818 and 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: P0108818 and 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 emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of a minor modification.

[Authority for term: P0108818 and 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 P001STK5355 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: P0108818 and 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: P0108818 and OAC rule 3745-77-07(C)(1)]

(8) The CAM plan for this emissions unit has been developed for particulate emissions, CO and VOC. The CAM performance indicators for particulate emissions are the scrubbing liquid flow rate to the main process control system venturi scrubber (SBR-1305), the maintenance control system venturi scrubber (SBR-5375), and the startup control system venturi scrubber (SBR-0100). The CAM performance indicator for CO and VOC is the thermal converter (BRN-5330) combustion temperature.

a. The main process control system venturi scrubber (SBR-5305) 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, calibration periods, or safety bypass events.

b. The thermal converter (BRN-5330) average combustion temperature is any 3-hour block of time, of not less than 1,350 degrees Fahrenheit (762 degrees Celsius) as outlined in the PMMAP except during startup, shutdown, maintenance, malfunction, calibration periods, or safety bypass events.

c. The maintenance process control system venturi scrubber (SBR-5375) liquid flow rate1-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.

d. The startup control system venturi scrubber (SBR-0100) liquid flow rate as a one 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.

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 application for these emissions units, P001 and P006, combined, was evaluated based on the actual materials and the design parameters of the emissions units' exhaust system, as specified by the permittee. The "Toxic Air Contaminant Statute", ORC 3704.03(F), was applied to these emissions units for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminant with an increase over one ton per year using an air dispersion model SCREEN3. The predicted 1-hour maximum ground-level concentration results from the approved air dispersion model, was compared to the MAGLC, calculated as described in the Ohio EPA guidance document entitled "Review of New Sources of Air Toxic Emissions, Option A", as follows:

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

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

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

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

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

TLV/10 x 8/X x 5/Y = 4 TLV/XY = MAGLC

d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year):

Toxic Contaminant:	CS_2 CAS 75-15-0	HCl
TLV (mg/m3):	3.108	2.194
Maximum Hourly Emission Rate (lbs/hr):	4.875	2.025
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3):	16.39	6.81
MAGLC (ug/m3):	74	52

The permittee, has demonstrated that emissions of CS_2 and HCl from emissions units P001 and P006, combined, were calculated to be less than eighty per cent of the MAGLC; no new raw material or processing agent shall be applied without evaluating each component toxic air contaminant in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F).

[Authority for term: P0108818 and ORC 3704.03(F)]

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

a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower TLV than the lowest TLV previously modeled;

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

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

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

[Authority for term: P0108818 and ORC 3704.03(F)]

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

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

b. the MAGLC for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the "Toxic Air Contaminant Statute", ORC 3704.03(F);

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

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

[Authority for term: P0108818 and ORC 3704.03(F)]

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

[Authority for term: P0108818 and ORC 3704.03(F)]

(13) 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 SBR-5305 wet scrubber liquid flow rate was lower than the recommended minimum from above;

b. each period of time (start time and date, and end time and date) when the thermal convertor BRN-5330 average combustion temperature, (all 3-hour blocks of time) was lower than the recommended minimum from above;

c. each period of time (start time and date, and end time and date) when the thermal convertor BRN-5330 average secondary air excess oxygen, in percent as a 3-hour average, was more than the recommended maximum from above;

d. each period of time (start time and date, and end time and date) when the packed column caustic scrubber mist eliminator SBR-5390 20% caustic solution flow rate was lower than the recommended minimum from above;

e. each period of time (start time and date, and end time and date) during cold startup operation when the venturi scrubber SBR-0100 liquid flow rate was lower than the recommended minimum from above;

f. each period of time (start time and date, and end time and date) during maintenance operation when venturi scrubber SBR-5375 liquid flow rate was lower than the recommended minimum from above;

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

h. each incident of deviation described in "a" through "e" (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

i. each incident of deviation described in "a" through "e" (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.

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

(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: P0108818 and OAC 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: P0108818 and OAC 3745-77-07(C)(1)]

(4) Notification must be made to Ohio EPA Northeast District Office within 24 hours after any of the following conditions occurs:

a. a malfunction incident such that process equipment, control equipment or related equipment breaks down or fails in such a manner as to cause air contaminant emissions above the allowable levels specified in section b)(1). (except as provided in section b)(2)h.;

b. a malfunction has been corrected and the equipment is operational again; or

c. actions are taken during a safety bypass that are not consistent with the PMMAP.

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

(5) Written notification must be made to Ohio EPA Northeast District Office after actions are taken during a safety bypass that are not consistent with the PMMAP within the specified time period(s) and shall include the name, title, and signature of the owner or operator or other responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the PMMAP, whether any excess emissions and/or parameter monitoring exceedances are believed to have occurred, and if there was delay in making repairs, proof that repair parts have been ordered or any other records that would explain that the delay was beyond the owner/operator's control:

a. within 7 work days after the end of a safety bypass incident, excluding safety bypasses resulting from temperature monitoring of the thermal convertor BRN-5330; and

b. within 14 work days after the end of a thermal convertor BRN-5330 temperature monitoring safety bypass incident.

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

(6) The permittee shall submit quarterly deviation (excursion) reports to the Ohio EPA Northeast District Office. If no malfunctions occurred during a calendar quarter, the permittee shall submit a quarterly report that states that no deviations occurred during that quarter. These reports shall contain the following information for each malfunction incident:

a. date of the incident;

b. commencement time, completion time and duration;

c. an identification of the process equipment and/or control equipment affected by the malfunction;

d. an identification and estimated quantity of air contaminant emissions that have been or may have been emitted (in pounds);

e. the corrective actions taken (if any);

f. whether the actions taken were consistent with the procedures specified in the PMMAP or not; and

g. if applicable, the reasons why the PMMAP procedures were not followed.

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

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

(8) The permittee shall submit annual reports of any material changes to any parameter or value used in the dispersion model used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1 hour maximum concentration. The report should include:

a. the original model input;

b. the updated model input;

c. the reason for the change(s) to the input parameter(s);

d. a summary of the results of the updated modeling, including the input changes; and

e. a statement indicating if the updated model results indicate that the 1-hour maximum ground-level concentration is less than 80% of the MAGLC.

If no changes to the emissions, emissions unit(s), or the exhaust stack have been made during the reporting period, then the report shall include a statement to that effect.

[Authority for term: P0108818 and ORC 3704.03(F)]

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 demonstrated through visible particulate emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

$PM/PM_{10}/PM_{2.5}$ emissions shall not exceed 1.25 lbs/hr and 5.48 tpy.

Applicable Compliance Method:

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

If required, the permittee shall demonstrate compliance with the short-term PM_{10} emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 40 CFR Part 51, Appendix M, Methods 201A and 202.

If required, the permittee shall demonstrate compliance with the short-term $PM_{2.5}$ emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 40 CFR Part 51, Appendix M, Method 202.

The tpy emission limitation was developed by multiplying the short-term allowable particulate emission limitation (1.25 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton.

Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

c. Emission Limitation:

SO_2 emissions shall not exceed 8.90 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 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 CERMS data in accordance with the facility-wide term B.3.d).

d. Emission Limitation:

CO emissions shall not exceed 15.89 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

e. Emission Limitation:

NO_x emissions shall not exceed 0.64 lb/hr and 2.80 tpy.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7E.

The tpy emission limitation was developed by multiplying the short-term allowable NO_x emission limitation (0.64 lb/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

f. Emission Limitation:

HCl emissions shall not exceed 3.79 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 26.

g. Emission Limitation:

COS/VOC emissions shall not exceed 1.69 lbs/hr and 7.40 tpy.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 15.

The tpy emission limitation was developed by multiplying the short-term allowable COS/VOC emission limitation (1.69 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

h. Emission Limitation:

H_2SO_4 emissions shall not exceed 4.50 lbs/hr and 19.71 tpy.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 8.

The tpy emission limitation was developed by multiplying the short-term allowable H_2SO_4 emission limitation (4.50 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

i. Emission Limitation:

PE shall not exceed 37.0 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly emission limitation through an emission test performed in accordance with the methods and procedures specified in 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: P0108818 and OAC rule 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.

5. P007, Spray Dryer B

Operations, Property and/or Equipment Description:

Train B Finishing process: including a TiO2 paste feed tank (TNK-2501), TiO2 paste dryer (DRY-2505), a nominal 50 mmBtu/hr natural gas fired burner (BRN-7508) with four baghouses (BAG-7515, BAG-7517, BAG-7519 and BAG-7521) 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.	ORC 3704.03(T) [PTI P0116093 effective 1/28/2014]	Carbon monoxide (CO) emissions from the collection system egress STK-7537 shall not exceed 3.45 lbs/hr. Nitrogen oxides (NOx) emissions from the collection system egress STK-7537 shall not exceed 4.90 lbs/hr.
b.	OAC rule 3745-31-05(A)(3), as effective 11/30/2001 [PTI P0116093 effective 1/28/2014]	Particulate matter (PM_{10}) less than 10 microns in diameter/ particulate matter ($PM_{2.5}$) less than 2.5 microns in diameter from the collection system egress STK-7537 shall not exceed 2.19 lbs/hr, which is the same as .00539 grain/dscf and 9.60 tpy. Filterable particulate matter (PM) from the collection system egress STK-7537 shall not exceed 1.91 lbs/hr which is the same as 0.00470 grain/dscf and 8.37 tpy. Organic compounds (OC) emissions from the collection system egress STK-7537 shall not exceed 0.54 lb/hr and 2.36 tpy. There shall be no visible particulate emissions from the collection system egress STK-7537, except during periods

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		of startup, shutdown or malfunction as set forth in 40 CFR 60.8(c) and OAC rule 3745-15-06. The exclusion for uncombined water as set forth in OAC rule 3745-17-07(A)(2) shall apply. See b)(2)a and b)(2)c.
c.	OAC rule 3745-31-05(A)(3), as effective 12/01/2006 [PTI P0116093 effective 1/28/2014]	See b)(2)b.
d.	40 CFR Part 60, Subpart UUU (60.730 – 60.737)	Particulate emissions shall not exceed 0.025 grain/dscf and 10% opacity, as a 6-minute average from the collection system egress STK-7537. The emission limitations specified in 40 CFR Part 60, Subpart UUU are currently less stringent than the emission limitations established pursuant to OAC rule 3745-31-05(A)(3) as effective November 30, 2001. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the Ohio State Implementation Plant, the PM emission limitation of 0.025 grain/dscf of exhaust gases from the collection system egress STK-7537 specified in 40 CFR 60.732(a) shall apply.
e.	OAC rule 3745-17-07(A)	The requirements specified in OAC rule 3745-17-07(A) are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3) and 40 CFR Part 60, Subpart UUU.
f.	OAC rule 3745-17-11(B)	The requirements established pursuant to OAC rule 3745-17-11(B) are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3) and 40 CFR Part 60, Subpart UUU.
g.	OAC rule 3745-18-06	This emission unit is exempt from paragraphs (D), (F) and (G) of this rule and from rules OAC rule 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 permittee has satisfied the Best Available Technology (BAT) requirements pursuant to Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3), as effective November 30, 2001, in this permit. On December 1, 2006, paragraph (A)(3) of OAC rule 3745-31-05 was revised to conform to the Ohio Revised Code (ORC) changes effective August 3, 2006 (Senate Bill 265 changes), such that BAT is no longer required by State regulations for National Ambient Air Quality Standards (NAAQS) pollutant(s) less than ten tons per year. However, that rule revision has not yet been approved by U.S. EPA as a revision to Ohio's State Implementation Plan (SIP). Therefore, until the SIP revision occurs and the U.S. EPA approves the revisions to OAC rule 3745-31-05, the requirement to satisfy BAT still exists as part of the federally-approved SIP for Ohio.

Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05, these emission limitations/control measures no longer apply.

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the sulfur dioxide emissions or OC emissions from this air contaminant source since the uncontrolled potential to emit for these emissions are each less than 10 tons per year.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the $PM/PM_{10}/PM_{2.5}$ emissions from this air contaminant source since the after control potential to emit for these emissions are each less than 10 tons per year.

c. No BAT controls are required for the condensable fraction of PM emissions from this emissions unit. The BAT limit for this emissions unit includes condensable PM emissions based upon AP-42 emission factors for natural gas combustion. The condensable fraction of the BAT limit may be adjusted upward, with an administrative permit amendment, to the extent warranted by future stack testing that is more representative of actual condensable PM emissions from this emissions unit than the AP-42 emission factor relied upon.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the TiO_2 paste dryer burner (BRN-7508).

[Authority for term: P0116093 and OAC rule 3745-77-07(A)]

(2) The permittee shall employ the four baghouse collection system (BAG-7515, BAG-7517, BAG-7519 and BAG-7521) at all times while the emissions unit is in normal operation. The baghouse collection system operates as a product collection device and inherently cannot be bypassed; therefore, no monitoring, record keeping or reporting of the operating time of the baghouse collection device is required.

[Authority for term: P0116093 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 TiO2 paste dryer burner (BRN-7508), the permittee shall maintain a record of the type and quantity of fuel burned, and the sulfur content of the fuel.

[Authority for term: P0116093 and OAC rule 3745-77-07(C)(1)]

(2) The permittee shall perform daily checks of the spray dryer STK-7537 egress 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 emissions 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 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: P0116093 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: P0116093 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 STK-7537 egress; 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: P0116093 and OAC rule 3745-77-07(A)]

(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 semiannual basis for four 6-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: P0116093 and Administrative Consent Order EPA-5-13-113(a)-OH-05]

(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 (BRN-7508). Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: P0116093 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:

There shall be no visible particulate emissions from the collection system egress STK-7537, except during periods of startup, shutdown or malfunction as set forth in 40 CFR 60.8(c) and OAC rule 3745-15-06. The exclusion for uncombined water as set forth in OAC rule 3745-17-07(A)(2) shall apply.

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible particulate emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 22.

b. Emission Limitation:

Visible particulate emissions shall not exceed 10% opacity, as a 6-minute average from the collection system egress STK-7537.

Applicable Compliance Method:

If required, compliance shall be demonstrated through visible particulate emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

c. Emission Limitation:

$PM_{10}/PM_{2.5}$ emissions from the collection system egress STK-7537 shall not exceed 2.19 lbs/hr, which is the same as 0.00539 grain/dscf and 9.60 tpy.

Applicable Compliance Methods:

If required, the permittee shall demonstrate compliance with the short-term emission limitations through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 40 CFR Part 51, Appendix M, Methods 201A and 202.

The tpy emission limitation was developed by multiplying the short-term allowable particulate emission limitation (2.19 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

d. Emission Limitation:

Filterable PM emissions from the collection system egress STK-7537 shall not exceed 1.91 lbs/hr, which is the same as .00470 grain/dscf and 8.37 tpy.

Applicable Compliance Methods:

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

The tpy emission limitation was developed by multiplying the short-term allowable particulate emission limitation (1.91 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

e. Emission Limitation:

CO emissions from the collection system egress STK-7537 shall not exceed 3.45 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 10.

f. Emission Limitation:

NO_x emissions from the collection system egress STK-7537 shall not exceed 4.90 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 7E.

g. Emission Limitation:

OC emissions from the collection system egress STK-7537 shall not exceed 0.54 lb/hr and 2.36 tpy.

Applicable Compliance Methods:

If required, the permittee shall demonstrate compliance with the short-term emission limitation through an emission test performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and 25A.

The tpy emission limitation was developed by multiplying the short-term allowable OC emission limitation (0.54 lb/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

h. Emission Limitation:

PM emissions from the collection system egress STK-7537 shall not exceed 0.025 grain/dscf.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the hourly emission limitation through an emission test performed in accordance with the methods and procedures specified in 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 Part 60, Subpart UUU.

[Authority for term: P0116093 and OAC rule 3745-77-07(C)(1)]

g) Miscellaneous Requirements

(1) None.

6. P010, Oxygen Preheater and TiCl4 Vaporizer Train B

Operations, Property and/or Equipment Description:

Train B Oxidation process: including an aluminum chloride generator (GEN-5908), an oxidation reactor (REA-5904) with a paire filter product capture device (FLT-5905), a flue pond (HEX-5904) and a slurry tank (TNK-5907).

Natural gas fired oxygen preheater B (HTR-5902)and natural gas fired $TiCl_4$ vaporizer (VAP-5901).

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.

Train 'B" Oxidation Process includes an aluminum chloride generator (GEN-5908), an oxidation reactor (REA-5904), a flue pond (HEX-5904), a paire filter (FLT-5905), a slurry tank (TNK-5907)

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack serving this portion of the emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
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.

7.0 mmBtu/hr natural gas-fired oxygen preheater (HTR-5902)and 14.6 mmBtu/hr natural gas-fired $TiCl_4$ vaporizer (VAP-5901):

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
c.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving either of these portions of

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		the emissions unit shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
d.	OAC rule 3745-17-10(B)(1)	Particulate emissions (PE) from either of these portions of the emissions unit shall not exceed 0.020 lb/mmBtu of actual heat input.
e.	40 CFR Part 63, Subpart DDDDD (63.7480 – 63.7575) [In accordance with 40 CFR 63.7499, this emissions unit includes an existing natural gas-fired process heater less than 10 mmBtu/hr located at a major source; and an existing natural gas-fired process heater greater than 10 mmBtu/hr located at a major source.]	Per 40 CFR 63.7500, only work practices apply to this emissions unit. See b)(2)c and b)(2)d.

Oxidation Process fuel combustion operations [$TiCl_4$ vaporizer (VAP-5901) and O_2 preheater (HTR-5902)]:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
f.	OAC rule 3745-31-05(A)(3) (PTI 02-15582 effective 10/1/2008)	Carbon monoxide (CO) emissions shall not exceed1.78 lbs/hr and 7.80 tpy. Nitrogen oxide (NO_x) emissions shall not exceed 2.12 lbs/hr and 9.29 tpy. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-17-10.

(2) Additional Terms and Conditions

a. Exhaust gases from the paire filter (FLT-5905) product capture device, serving the oxidation reactor, are vented to the Train "B" Chlorination Process (P006) instead of the atmosphere. However, during startup or equipment pressure testing, nitrogen or oxygen is used to warm the oxygen preheater HTR-5902 so that no air contaminant emissions are generated when paire filter gases are exhausted to the atmosphere.

b. Because this emissions unit burns only natural gas, there is no applicable SO_2 emission 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]

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the $TiCl_4$ vaporizer (VAP-5901) burner and in the O_2 preheater burner (HTR-5902).

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI 02-15582]

d) Monitoring and/or Recordkeeping Requirements

(1) For each day during which the permittee burns a fuel other than natural gas in the $TiCl_4$ vaporizer (VAP-5901) burner or in the O_2 preheater burner (HTR-5902), 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 02-15582]

(2) The permittee shall comply with the monitoring and record keeping requirements 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: OAC rule 3745-77-07(C)(1) and 40 CFR Part 63, Subpart DDDDD]

e) Reporting Requirements

(1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the $TiCl_4$ vaporizer (VAP-5901) burner or in the O_2 preheater burner (HTR-5902). Each report shall be submitted within 30 days after the deviation occurs.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-15582]

(2) The permittee shall comply with the reporting and notification requirements 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: OAC rule 3745-77-07(C)(1) and 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. <u>Emission Limitation</u>:

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 demonstrated through visible particulate emission observations performed in accordance with the methods and procedures specified in 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 3745-77-07(C)(1) and PTI 02-15582]

b. Emission Limitation:

PE shall not exceed 0.020 lb/mmBtu of actual heat input.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through an emission test performed in accordance with the methods and procedures specified in 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 02-15582]

c. Emission Limitation:

CO emissions shall not exceed 1.78 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through an emission test performed in accordance with the methods and procedures specified in 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 02-15582]

d. Emission Limitation:

NO_x emissions shall not exceed 2.12 lbs/hr.

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with this emission limitation through an emission test performed in accordance with the methods and procedures specified in 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 02-15582]

e. Emission Limitations:

CO emissions shall not exceed 7.80 tpy.

NO_x emissions shall not exceed 9.29 tpy.

Applicable Compliance Method:

The CO tpy emission limitation was developed by multiplying the short-term allowable CO emission limitation (1.78 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

The NO_x tpy emission limitation was developed by multiplying the short-term allowable NO_x emission limitation (2.12 lbs/hr) by the maximum annual hours of operation (8,760 hours), and then dividing by 2,000 lbs per ton. Therefore, if compliance is shown with the short-term allowable emission limitation, compliance is demonstrated with the annual emission limitation.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI 02-15582]

g) Miscellaneous Requirements

(1) None.

7. P011, Oxygen Preheater and TiCl4 Vaporizer Train A

Operations, Property and/or Equipment Description:

Train A Oxidation process: including an aluminum chloride generator (GEN-1903), an oxidation reactor (REA-1921) with a paire filter product capture device (FLT-1935), a flue pond (HEX-1924) and a slurry tank (TNK-1940). Natural gas fired oxygen preheater A (HTR-1902) and natural gas fired $TiCl_4$ Vaporizer A (VAP-1901).

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.

14.6 mmBtu/hr natural gas-fired titanium tetrachloride ($TiCl_4$) vaporizer (VAP-1901):

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI P0106447 effective 6/29/2010)	Carbon monoxide (CO) emissions shall not exceed 1.19 lbs/hr. Nitrogen oxides (NO_x) emissions shall not exceed 1.42 lbs/hr. Organic compound (OC) emissions shall not exceed 0.16 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-17-10(B)(1).
b.	OAC rule 3745-17-07(A)	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 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/mmBtu of actual heat input.
d.	40 CFR Part 63, Subpart DDDDD (63.7480 – 63.7575) [In accordance with 40 CFR	Per 40 CFR 63.7500, only work practices apply to this emissions unit. See b)(2)b.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	63.7499, this emissions unit includes an existing natural gas-fired process heater greater than 10 mmBtu/hr located at a major source.]	

7 mmBtu/hr natural gas-fired oxygen (O_2) preheater (HTR-1902):

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
e.	OAC rule 3745-31-05(A)(3) (PTI P0106447 effective 6/29/2010))	CO emissions shall not exceed 0.57 lb/hr. NO_x emissions shall not exceed 0.68 lb/hr. OC emissions shall not exceed 0.08 lb/hr. The requirements of this rule also include compliance with the requirements of OAC rules 3745-17-07(A) and 3745-17-10(B)(1).
f.	OAC rule 3745-17-07(A)	Visible PE from any stack egress shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.
g.	OAC rule 3745-17-10(B)(1)	PE shall not exceed 0.020 lb/mmBtu of actual heat input.
h.	40 CFR Part 63, Subpart DDDDD (63.7480 – 63.7575) [In accordance with 40 CFR 63.7499, this emissions unit includes an existing natural gas-fired process heater less than 10 mmBtu/hr located at a major source.]	Per 40 CFR 63.7500, only work practices apply to this emissions unit. See b)(2)b.

All egress points:

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
i.	OAC rule 3745-31-05(A)(3) (PTI P0106447 effective 6/29/2010)	PE shall not exceed 1.89 tpy. CO emissions shall not exceed 7.72 tpy. NO_x emissions shall not exceed 9.19 tpy. OC emissions shall not exceed 1.01 tpy.

(2) Additional Terms and Conditions

a. Exhaust gases from the paire filter (FLT-1935) product capture device, serving the oxidation reactor, are routed to the Train "A" Chlorination Process (P001) instead of the atmosphere. However, during startup, shutdown or equipment pressure testing, nitrogen or oxygen is used to warm or purge the oxygen preheater (HTR-1902), so no air contaminant emissions are generated when the paire filter gases are exhausted to the atmosphere.

b. The permittee shall comply with the work practice restriction requirements 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]

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the $TiCl_4$ vaporizer (VAP-1901) burner and in the O_2 preheater burner (HTR-1902).

[Authority for term: OAC rule 3745-77-07(A)(1) and PTI P0106447]

d) Monitoring and/or Recordkeeping Requirements

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

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106447]

(2) The permittee shall maintain a record of the daily hours of operation for this emissions unit.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106447]

(3) The permittee shall comply with the monitoring and record keeping requirements 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: OAC rule 3745-77-07(C)(1) and 40 CFR Part 63, Subpart DDDDD]

e) Reporting Requirements

(1) The permittee shall submit deviation (excursion) reports that include an identification of 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 P0106447]

(2) 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 P0106447]

(3) The permittee shall comply with the reporting and notification requirements 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: OAC rule 3745-77-07(C)(1) and 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 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 demonstrated based upon visible PE observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and OAC rule 3745-17-03(B)(1).

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106447]

b. Emission Limitation:

PE shall not exceed 0.020 lb/mmBtu of actual heat input from each egress point for the $TiCl_4$ vaporizer (VAP-1901) and the O_2 preheater (HTR-1902).

Applicable Compliance Method:

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

E(PE) = EF/HC

where:

E_VAP1901(PE) = the PE rate from the $TiCl_4$ vaporizer (VAP-1901), in pounds PE per million Btu of maximum heat input;

E_HTR1902(PE) = the PE rate from the O_2 preheater (HTR-1902), 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 P0106447.

If required, the permittee shall demonstrate compliance with this emission limitation through emission tests performed in accordance with the methods and 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 P0106447]

c. Emission Limitation:

PE shall not exceed 1.89 tpy from all egress points.

Applicable Compliance Method:

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

PE_TOTAL = [(E_VAP1901(PE) x mmBtu_VAP1901/hr) + (E_HTR1902(PE) x mmBtu_HTR1902/hr] x HRS/YR x 1 ton PE/2000 lbs PE

where:

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

mmBtu_VAP1901/hr = the maximum rated heat input capacity of the $TiCl_4$ vaporizer (VAP-1901), which is 14.6 mmBtu/hr as specified in the application for PTI P0106447;

mmBtu_HTR1902/hr = the maximum rated heat input capacity of the O_2 preheater (HTR-1902), which is 7 mmBtu/hr as specified in the application for PTI P0106447; 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 3745-77-07(C)(1) and PTI P0106447]

d. Emission Limitations:

CO emissions shall not exceed 1.19 lbs/hr from the $TiCl_4$ vaporizer (VA9-1901) egress.

CO emissions shall not exceed 0.57 lb/hr from the O_2 preheater (HTR-1902) egress.

NO_x emissions shall not exceed 1.42 lbs/hr from the $TiCl_4$ vaporizer (VA9-1901) egress.

NO_x emissions shall not exceed 0.68 lb/hr from the O_2 preheater (HTR-1902) egress.

OC emissions shall not exceed 0.16 lb/hr from the $TiCl_4$ vaporizer (VAP-1901) egress.

OC emissions shall not exceed 0.08 lb/hr from the O_2 preheater (HTR-1902) 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 CO, NO_x or OC emissions, in pounds/hour;

EF(CO) = the CO emissions factor, 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);

EF(NO_X) = the NO_x emissions factor, 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); and

EF(OC) = 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).

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI P0106447]

e. Emission Limitations:

CO emissions shall not exceed 7.72 tpy from all egress points.

NO_x emissions shall not exceed 9.19 tpy from all egress points.

OC emissions shall not exceed 1.01 tpy from all egress points.

Applicable Compliance Method:

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

E(TPY) = (E_VAP1901 + E_HTR1902) x HRS/YR x 1 ton/2,000 lbs

where:

E(TPY) = the rate of CO, NO_x or OC emissions, in tons/year;

E_VAP1901 = the CO, NO_x or OC emissions rate from the $TiCl_4$ vaporizer (VAP-1901), in pound(s) per hour, as specified in f)(1)d; and

E_HTR1902 = the CO, NO_x or OC emissions rate from the O_2 preheater (HTR-1902), in pound(s) per hour, as specified in f)(1)d.

If required, the permittee shall demonstrate compliance with these emission limitations through emission tests performed in accordance with the procedures specified in the following methods:

for CO – 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 10;

for NO_x - 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 7E; and

for OC - 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 18, 25 or 25A, as appropriate.

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

[Authority for term: OAC rules 3745-15-04 and 3745-77-07(C)(1) and PTI P0106447]

g) Miscellaneous Requirements

(1) None.

8. P901, Coke and Ore Unloading, Storage, and Handling

Operations, Property and/or Equipment Description:

Coke and ore material storage and feed system load-in.

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), as effective 11/30/01 [PTI P0108818 effective 4/6/2012]	Fugitive particulate emissions (PE) shall not exceed 6.03 tons per year. Fugitive particulate emissions less than 10 microns in diameter (PM_{10}) shall not exceed 2.85 tons per year. The requirements established pursuant to OAC rule 3745-31-05(A)(3) as effective 11/30/2001 include the requirements of OAC rule 3745-17-08(B) and OAC rule 3745-17-07(B)(6). See b)(2)a and b)(2)e.
b.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/06 [PTI P0108818 effective 4/6/2012]	See b)(2)f.
c.	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)b through b)(2)d.
d.	OAC rule 3745-17-07(B)(1)	Visible particulate emissions from any fugitive dust source, except the material storage piles, shall not exceed 20% opacity as a 3-minute average.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		The emission limitation specified in OAC rule 3745-17-07(B)(1) is currently less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3) as effective November 30, 2001. Once U.S. EPA approves the December 1, 2006 version of OAC rule 3745-31-05 as part of the Ohio State Implementation Plant, the visible particulate emission limitation in this rule shall apply.
e.	OAC rule 3745-17-07(B)(6)	No visible particulate emissions from any material storage pile except for a period of time not to exceed 13 minutes during any 60-minute observation period.

(2) Additional Terms and Conditions

a. Visible emissions of fugitive dust from any building opening enclosing the ore and coke material handling and storage operations shall not exceed 10% opacity as a 3-minute average.

b. The material handling operation(s) that are covered by this permit and subject to the following requirements are listed below:

i. truck dumping of ore and coke to temporary piles within the material storage building;

ii. ore and coke temporary pile load-out to front end loader within the material storage building;

iii. loader dumping into A-train underground hopper (HOP-1021) located within the material storage building;

iv. loader dumping into B-train underground hopper (HOP-5000) located within the material storage building; and

v. temporary pile wind erosion.

c. 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:

i. maintain operations within a four-sided building enclosure.

If necessary to eliminate fugitive emissions, close building openings, weather permitting.

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 3745-31-05(A) and OAC rule 3745-17-08.

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

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the particulate emissions from this air contaminant source since the potential to emit for particulate emissions is less than 10 tons per year.

c) Operational Restrictions

(1) None.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions of fugitive dust from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit. The presence or absence of any visible fugitive 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 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: P0108818 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 emissions of fugitive dust were observed from the egress points (i.e., building windows, doors, roof monitors, etc.) serving this emissions unit, and

b. describe any corrective actions taken to minimize or eliminate the visible fugitive dust 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: P0108818 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>:

Fugitive PE shall not exceed 6.03 tons per year.

Fugitive PM_{10} emissions shall not exceed 2.85 tons per year.

<u>Applicable Compliance Method</u>:

Compliance with the fugitive particulate emission limitation shall be demonstrated by multiplying the particulate emission factor by the annual throughput and the number of drop points.

PM/ PM_{10}=[(PWRore) x EFore x 4 transfer points] + [(PWRcoke x EFcoke x 4 transfer points]

where:

PWRore = actual tons of ore received per year, (maximum 165,000 tons);

PWRcoke = actual tons of coke received per year, (maximum 48,000 tons);

EFore =emissions factor in pounds per ton of ore processed per drop point as calculated from the formula found in AP-42, Compilation of Air Pollutant Emission Factors, 13.2.4 Aggregate Handling and Storage Piles (11/06) or more recent version and the following variables:

For PM:

k= 0.74 particulate size multiplier for PM <30 micron;

U= 1.3 mph mean wind speed; and

M= 0.20 % material moisture content;

For PM_{10}:

k= 0.35 particulate size multiplier for PM <10 micron;

U= 1.3 mph mean wind speed; and

M= 0.20 % material moisture content;

EFcoke =emissions factor in pounds per ton of coke processed per drop point as calculated from the formula found in AP-42, Compilation of Air Pollutant Emission Factors, 13.2.4 Aggregate Handling and Storage Piles (11/06) or more recent version and the following variables:

For PM:

k= 0.74 particulate size multiplier for PM <30 micron;

U= 1.3 mph mean wind speed; and

M= 0.10 % material moisture content;

For PM_{10}:

k= 0.35 particulate size multiplier for PM <10 micron;

U= 1.3 mph mean wind speed; and

M= 0.10 % material moisture content.

b. Emission Limitation:

Visible emissions of fugitive dust from any building opening enclosing the ore and coke material handling and storage operations shall not exceed 10% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for fugitive dust from material handling operations shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

c. Emission Limitation:

Visible particulate emissions from any fugitive dust source, except the material storage piles, shall not exceed 20% opacity as a 3-minute average.

Applicable Compliance Method:

Compliance with the visible emission limitation for fugitive dust from material handling operations shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(3).

d. Emission Limitation:

No visible particulate emissions from any material storage pile except for a period of time not to exceed 13 minutes during any 60-minute observation period.

Applicable Compliance Method:

Compliance with the visible emission limitation for fugitive dust from any material storage pile shall be demonstrated through visible emission observations performed in accordance with the methods and procedures specified in OAC rule 3745-17-03(B)(4).

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

g) Miscellaneous Requirements

a. None.