



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

9/18/2015

Certified Mail

Paul Logsdon
Lima Refining Company
1150 South Metcalf Street
Lima, OH 45804

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0302020012
Permit Number: P0119111
Permit Type: Administrative Modification
County: Allen

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

Dear Permit Holder:

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

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

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

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

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

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

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

Sincerely,



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

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



Response to Comments

Facility ID:	0302020012
Facility Name:	Lima Refining Company
Facility Description:	Petroleum Refinery and Storage
Facility Address:	1150 South Metcalf Street Lima, OH 45804 Allen County
Permit:	P0119111, Permit-To-Install - Administrative Modification
A public notice for the draft permit issuance was published in the Ohio EPA Weekly Review and appeared in the The Lima News on 07/28/2015. The comment period ended on 08/27/2015.	
Hearing date (if held)	N/A
Hearing Public Notice Date (if different from draft public notice)	N/A

The following comments were received during the comment period specified. Ohio EPA reviewed and considered all comments received during the public comment period. By law, Ohio EPA has authority to consider specific issues related to protection of the environment and public health. Often, public concerns fall outside the scope of that authority. For example, concerns about zoning issues are addressed at the local level. Ohio EPA may respond to those concerns in this document by identifying another government agency with more direct authority over the issue.

In an effort to help you review this document, the questions are grouped by topic and organized in a consistent format. PDF copies of the original comments in the format submitted are available upon request.

1. Topic: NSPS Subpart J v. Ja

- a. Comment: C.1.b)(2)g.i. and ii., b)(2)o., d)(2), d)(3), d)(5), e)(5)a., e)(5)b. and the staff determination BACT Table should use NSPS Ja citation and language instead of NSPS J.
- b. Response: Ohio EPA concurs and has made the appropriate changes.

2. Topic: Numbering issues and typographical errors

- a. Comment: The term and condition numbering in Part B. is off and needs to be adjusted.
- b. Comment: C.1.b)(1)k.: 0.04 lb/million BTU refers to NOx so that should be added
- c. Comment: There were numbering issues with C.1.b)(2)h.i., b)(2)m., b)(2)m., b)(2)n.. Additionally, the following refers to incorrect terms and need to be renumbered: C.2.b)(1)d. through f., b)(1)h.
- d. Comment: C.1.f)(1)f. the NOx limit should be 84.92 not 84.22.
- e. Comment: C.2.b)(1)c. is a duplicate citation, please remove.

- f. Response for 2.a. through f.: All numbering issues have been resolved and typographical errors have been corrected.
- g. Comment: C.2.b)(1)h. and f)(1)h. the CO limit should be 12.20 not 10.22.
- h. Response: Ohio EPA disagrees. The emission factor of 0.37 lb/mmBtu described in C.1.f)(1)h. is incorrect. The correct emission factor as identified in AP-42 Table 13.5-1 is 0.31 lb/mmBtu. Using the correct emission factor, the CO emission limitation is calculated to be 10.22 TPY CO as identified.

3. Topic: BACT Permitting

- a. Comment: Staff Determination Table 1 NOx reduction value for P005 should not be -35.89 it should be zero and be referenced in footnote a.
- b. Comment: B.8.b)(1): P036 should not be included since it will be taken out of service when P050 is placed in service.
- c. Response: Ohio EPA agrees and all changes have been made.
- d. Comment: C.1.b)(2)q. LRC proposes the following text: PTI P0109701 established the interim system wide NOx limit of 0.060 lb per million btu. The subsequent PTI P0116161 established the final system wide NOx limit of 0.044 lb per million btu.
- e. Response: Ohio EPA has rephrased the language to better fulfill the intent of the term and conditions. The language is as follows "This permit maintains a facility requested NOx emission limitation of 0.035 lb per million Btu of actual heat input initially established in PTI No. P0109701 in accordance with the requirements in the federal consent decree addendum, civil action No. SA07CA0683RF, which became effective on 11/20/07. The NOx emission limitation of 0.035 lb per million Btu of actual heat input was reiterated as part of PTI No. P0116161 to reflect the final voluntary limits to meet a system-wide average NOx performance level of 0.044 lb per million Btu per consent decree requirements. The NOx BACT emission limitation established pursuant to OAC rule 3745-31-10 through 3745-31-20 is more stringent than the NOx emission limitation established as part of the federal consent decree addendum, civil action No. SA07CA0683RF."



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
Lima Refining Company**

Facility ID: 0302020012
Permit Number: P0119111
Permit Type: Administrative Modification
Issued: 9/18/2015
Effective: 9/18/2015



Division of Air Pollution Control
Permit-to-Install
for
Lima Refining Company

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Final Permit-to-Install
Lima Refining Company
Permit Number: P0119111
Facility ID: 0302020012
Effective Date: 9/18/2015

Authorization

Facility ID: 0302020012
Facility Description: Petroleum Refinery and Storage
Application Number(s): A0053462
Permit Number: P0119111
Permit Description: Administrative modification to the original crude oil flexibility (COF) project permit which will allow for an increase burner capacity of the crude II furnace (B004) and increase the capacity of the acid gas flare (P050) based on updated design plans.
Permit Type: Administrative Modification
Permit Fee: \$1,975.00
Issue Date: 9/18/2015
Effective Date: 9/18/2015

This document constitutes issuance to:

Lima Refining Company
1150 South Metcalf Street
Lima, OH 45804

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

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

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

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Final Permit-to-Install
Lima Refining Company
Permit Number: P0119111
Facility ID: 0302020012
Effective Date: 9/18/2015

Authorization (continued)

Permit Number: P0119111
Permit Description: Administrative modification to the original crude oil flexibility (COF) project permit which will allow for an increase burner capacity of the crude II furnace (B004) and increase the capacity of the acid gas flare (P050) based on updated design plans.

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

Emissions Unit ID:	B004
Company Equipment ID:	Crude II Process Heater (PR 175150)
Superseded Permit Number:	P0114527
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P050
Company Equipment ID:	Acid Gas Flare
Superseded Permit Number:	P0114527
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
Lima Refining Company
Permit Number: P0119111
Facility ID: 0302020012
Effective Date: 9/18/2015

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

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

2. Severability Clause

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

3. General Requirements

- a) Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.

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

4. Monitoring and Related Record Keeping and Reporting Requirements

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

- (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Ohio EPA DAPC, Northwest District Office. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.
 - (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Ohio EPA DAPC, Northwest District Office every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - (4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. Scheduled Maintenance/Malfunction Reporting

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

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

6. Compliance Requirements

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

local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

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

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

7. Best Available Technology

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

8. Air Pollution Nuisance

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

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Northwest District Office.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA DAPC, Northwest District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

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

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

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the

Director within a reasonable time before the termination date and the permittee shows good cause for any such extension.

- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).
- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

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

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

12. Permit-To-Operate Application

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

13. Construction Compliance Certification

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

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

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

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. Fees

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

17. Permit Transfers

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

18. Risk Management Plans

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

19. Title IV Provisions

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



Final Permit-to-Install
Lima Refining Company
Permit Number: P0119111
Facility ID: 0302020012
Effective Date: 9/18/2015

B. Facility-Wide Terms and Conditions

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

a) None.

2. The following emissions units contained in this permit are subject to 40 CFR, Part 60, Subpart Ja, Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction or Modification Commenced after May 14, 2007: B004 and P050. 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, Northwest District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart Ja. The permittee shall also comply with all applicable requirements of 40 CFR, Part 60, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 60, Subpart Ja, and Subpart A.

3. The following emissions units contained in this permit are subject to 40 CFR, Part 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial and Institutional Boilers and Process Heaters: B004. The complete NESHAPS requirements, including the NESHAPS 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, Northwest District Office.

The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart DDDDD. The permittee shall also comply with all applicable requirements of 40 CFR, Part 63, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 63, Subpart DDDDD, and Subpart A.

4. This PTI addresses a modification of the "refinery" operations associated with a project to increase the flexibility to process crude oil with higher sulfur and acid contents (heavy crude or bitumen). The requirements of this permit shall become enforceable on the date the permittee commences operation under the modification authorized by this permit. Identification of the specific date modified operation commences is required by term A.13.b) within the Standard Terms and Conditions of this permit. Authorization and permitting requirements associated with the current operation (prior to modification) of emissions units B001, B004, P005, P037, and P040 are contained in the facility's Title V permit and are incorporated by reference (IBR) as requirements of this permit as indicated by the following:

a) The permittee shall comply with all applicable emission limitations/control measures, operational restrictions, monitoring and recordkeeping requirements, reporting requirements, testing requirements, and additional term and condition requirements contained in the facility's Final Title V Chapter 3745-77 permit with an issuance and effective date of 11/13/14. The IBR requirements shall cease to be enforceable for each emissions unit after the date an emissions unit commences operation under the modification authorized by this permit as indicated above.

5. The modification project involves the replacement of the existing acid gas flare (emissions unit P036) with a new flare (emissions unit P050). Upon startup of the new acid gas flare (P050), the existing acid gas flare (P036) shall be permanently removed from service.

The new flare (P050) will provide emergency control for modified emissions unit P040 (Sulfur Recovery Unit - Claus 1 & 2 Units) and new emissions unit P049 (Sulfur Recovery Unit – Claus 3). During construction and periods of start-up involving changes to sulfur recovery unit (SRU) operations, the existing acid gas flare will remain in service providing control for SRU operations. During the time period the existing flare is utilized for providing control, the production of sulfur from SRU operations (P040) shall not exceed its existing design capacity of 110 tons (long) per day.

If any connection is made to the existing acid gas flare system prior to P036's removal from service, and if such connection is a flare modification " as defined in 40 CFR 60.100a (c), then the emissions unit P036 will become an "affected facility" subject to 40 CFR, Part 60, Subpart Ja as a modified flare.

Authorization and permitting requirements associated with operation of emissions unit P036 are contained in the facility's Title V permit. The requirements of 40 CFR, Part 60, Subpart Ja for the flare are incorporated by reference (IBR) as requirements of this permit as indicated by the following:

- a) The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart Ja – Standards of Performance for Petroleum Refineries for Which Construction, Reconstruction, or Modification Commenced After May 14, 2007 (See 40 CFR 60.100a – 109a). As specified in the rule, the work practice standards of 40 CFR 60.103a and the monitoring requirements of 40 CFR 60.107a are not required for modified flares until the later of November 11, 2015 or startup of the modified flare.
 - b) IBR requirements for emissions unit P036 shall become effective upon the commencement of operation under the modification which results in the existing acid gas flare becoming an "affected facility" subject to the requirements of 40 CFR, Part 60, Subpart Ja.
 - c) In association with the requirements of 40 CFR, Part 60, Subpart Ja, the permittee shall also comply with all applicable requirements of 40 CFR, Part 60, Subpart A (General Provisions). Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 60, Subpart A.
6. The permittee shall maintain records of sulfur production, in tons (long) per day from all SRU operations beginning on the date the permittee commences operation under the modification authorized by this permit and ending the date emissions unit P036 is replaced by the new flare (emissions unit P050).
 7. The permittee shall notify the Northwest District Office in writing of any daily record of sulfur production from SRU operations that exceeds 110 tons (long) per day during the time period specified in B.5 above. This notification shall identify the cause for the exceedance and the actual sulfur production, in tons (long). This notification shall be submitted to the Northwest District Office within 15 days after the exceedance.
 8. The permittee shall maintain the following records to demonstrate that the crude oil flexibility modification project, as described in PTI application A0053462 submitted on June 23, 2015 does not trigger a major modification for PM, PM₁₀/ PM_{2.5}, and VOC:
 - a) the projected actual annual emissions for PM, PM₁₀/ PM_{2.5}, and VOC, in tons per year, from the crude oil flexibility modification project as submitted in the PTI application A0053462 on June 23, 2015; and

- b) the total combined actual annual emissions for PM, PM₁₀/PM_{2.5}, and VOC, in tons per year, for five calendar years after commencing operation of the crude oil flexibility modification project for the following existing operations which are “affected” by the crude oil flexibility modification project:
- (1) emissions units; B002, B003, B016, B027, P010, and facility emissions from decanted oil tank storage and facility emissions from diesel fuel tank storage.

It should be noted that for purposes of determining the projected actual annual emissions for “modified” operations/emission units contained in this permit application A0053462, submitted June 23, 2015 (B001, B004, J011, P005, P037, P040, P049, and P050) the potential to emit reflected in allowable limitations shall be used.

9. The permittee shall notify the Northwest District Office in writing if annual emissions from all operations associated with the crude oil flexibility modification project, as specified in B.8 above, result in a significant PM, PM₁₀/PM_{2.5}, and/or VOC emissions increase and exceed the projected actual PM, PM₁₀/PM_{2.5}, and VOC emissions contained in PTI application A0053462, submitted June 23, 2015. This notification shall identify the cause for the difference from the preconstruction projection and the actual PM, PM₁₀/PM_{2.5}, and/or VOC emissions. This notification shall be submitted to the Northwest District Office within 60 days after the end of such year.
10. The permittee shall include new and modified natural gas piping components for emissions units B001, B004 and P049 for the crude oil flexibility project in the existing alternative leak detection and repair (LDAR) Monitoring Plan at the facility, which is listed in the facility’s current Title V permit, facility-wide term B.2. This requirement is established to ensure that LDAR is conducted for fugitive methane emissions associated with components in natural gas service.



Final Permit-to-Install
Lima Refining Company
Permit Number: P0119111
Facility ID: 0302020012
Effective Date: 9/18/2015

C. Emissions Unit Terms and Conditions

1. B004, Process Heater

Operations, Property and/or Equipment Description:

Reconstruction and modification of existing refinery fuel gas or natural gas fired crude II heater to include burner modification of existing low nitrogen oxide burners, and tube replacement, 646.3 million Btu/hr maximum heat input (PR 175150)

- 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 3745-17-10(B)(1)	See b)(2)a.
b.	OAC rule 3745-17-07(A)	Visible particulate emissions (PE) from any stack shall not exceed 20% opacity, as a 6-minute average, except as provided by the rule.
c.	OAC rule 3745-18-08(C)(2)	See b)(2)b.
d.	40 CFR, Part 63, Subpart DDDDD (40 CFR 63.7480-7575) [In accordance with 63.7575, this emissions unit is in the 'unit designed to fire Gas 1 fuels' subcategory existing process heater located at a major source of HAP emissions and subject to the applicable emissions limitations/ control requirements specified in this section.]	See b)(2)c., c)(2) and c)(3) 63.7500(a) Table 3 requirements
e.	40 CFR, Part 60, Subpart J & Ja	See b)(2)d. through b)(2)h.
f.	40 CFR, Part 60, Subpart A	See 40 CFR 60.1 through 60.19
g.	OAC rule 3745-31-05(D)	0.0075 lb of particulate emissions/ particulate matter less than or equal to 10 microns in diameter/particulate matter less than or equal to 2.5 microns in diameter (PE/PM ₁₀ /PM _{2.5})/million Btu of

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>actual heat input and 21.23 tons of PE/PM₁₀/PM_{2.5}/yr</p> <p>0.0054 lb of volatile organic compounds (VOC)/million Btu of actual heat input and 15.29 tons of VOC/yr</p> <p>0.035 lb of nitrogen oxides (NOx)/million Btu of actual heat input</p> <p>See b)(2)i., b)(2)j. and b)(2)q.</p>
h.	ORC 3704.03(T)	See b)(2)k.
i.	OAC rule 3745-31-05(A)(3), as effective June 30, 2008	See b)(2)l. and b)(2)m.
j.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM₁₀ and VOC emissions from this air contaminant source since the potential to emit is less than 10 tons/yr taking into account the federally enforceable restrictions in b)(1)g.</p> <p>See b)(2)n.</p>
k.	OAC rules 3745-31-10 through 3745-31-20	<p>0.030lb of NOx/million Btu of actual heat input based upon a 365-day rolling average, 0.04 lb of NOx/million Btu of actual heat input based upon a 30-day rolling average, and 84.92 tons NOx/rolling, 12-month period [See b)(2)q.]</p> <p>0.04 lb of carbon monoxide (CO)/million Btu of actual heat input based upon a 365-day rolling average and 113.23 tons CO/rolling, 12-month period</p> <p>70.04 tons of sulfur dioxide (SO₂)/rolling, 12-month period</p> <p>Carbon dioxide equivalents (CO_{2e}) emissions shall not exceed 342,112 tons per rolling, 12-month period</p> <p>See b)(2)o.</p>
l.	OAC rule 3745-110	See b)(2)p.

(2) Additional Terms and Conditions

- a. The emission limitation of 0.020 lb of particulate emissions (PE) per million Btu of actual heat input specified by OAC 3745-17-10(B)(1) is less stringent than the PE limitation specified pursuant to OAC rule 3745-31-05(D).
- b. The emission limitation of 1.0lb of sulfur dioxide (SO₂) per million Btu of actual heat input specified by OAC 3745-18-08(C)(2) is less stringent than the SO₂emission limitation specified pursuant to OAC rule 3745-31-10 through 3745-31-20.
- c. This emissions unit is subject to the initial notification requirements of 40 CFR, Part 63, Subpart DDDDD (Boiler MACT) as outlined in 63.9(b) (i.e., it is not subject to the emission limits, performance testing, monitoring, or site-specific monitoring plan requirements of Subpart DDDDD or any other requirements in 40 CFR, Part 63, Subpart A).
- d. 40 CFR, Part 60 - Subpart J is an applicable rule for this emissions unit. The permittee was required to comply with this New Source Performance Standard for fuel combustion by 1/18/08, Per paragraph No. 115 of the federal consent decree addendum, civil action No. SA07CA0683RF, which became effective on 11/20/07.
- e. The requirements of 40 CFR, Part 60 - Subpart Ja are equivalent to and/or more stringent than the requirements of 40 CFR, Part 60 - Subpart J. Therefore, the requirements of 40 CFR, Part 60, Subpart J will not be listed in this permit modification. This emissions unit is an affected fuel gas combustion device, pursuant to the definition in 40 CFR 60.101a and is therefore subject to the emissions limitations in 40 CFR 60.102a. Pursuant to 40 CFR 60.102a(g)(1)(ii), the permittee has elected to comply with the SO₂ emissions limitations in this rule by monitoring the refinery fuel gas quality with a hydrogen sulfide (H₂S) continuous emissions monitor.

Therefore, the permittee shall not burn in this emissions unit any refinery fuel gas that contains H₂S in excess of 162 parts per million by volume (ppmv) determined hourly on a 3-hour rolling average basis and H₂S in excess of 60 ppmv determined daily on a 365 successive calendar day rolling average basis. This H₂S standard in 40 CFR 60.102a(g)(1)(ii) is also applicable if the permittee combines and combusts natural gas in any proportion with refinery fuel gas in this emissions unit, according to the fuel gas definition in 40 CFR 60.101a.

- f. Since this emissions unit has a rated capacity of greater than 40 million Btu per hour, it is subject to the NO_x emission limitation in 40 CFR 60.102a(g)(2). The 0.040 lb NO_x/million Btu HHV basis is determined daily on a 30-day rolling average basis. It is also subject to the limitation of 0.030lb nitrogen oxides (NO_x)/million Btu of actual heat input based upon a 365-day rollingaverage established pursuant to OAC rule 3745-31-10 through 3745-31-20.

- g. The permittee shall not burn any refinery fuel gas in this emissions unit that contains hydrogen sulfide (H₂S) in excess of the following limitations:
 - i. 162 ppm, as a 3-hour rolling average. This H₂S standard in 40 CFR 60.102a(g)(1)(ii) is also applicable if the permittee combines and combusts natural gas in any proportion with refinery fuel gas in this emissions unit, according to the fuel gas definition in 40 CFR 60.101a; or stack SO₂ not to exceed 20 parts per million by volume, dry basis, corrected to zero percent excess air; and
 - ii. 60 parts per million by volume of H₂S, dry basis, as a 365-day rolling average; or stack SO₂ not to exceed 8 parts per million by volume, dry basis, corrected to zero percent excess air.
- h. The permittee shall not discharge to the atmosphere any emissions of NO_x in excess of the applicable limits required by NSPS Subpart Ja as outlined below:
 - i. The permittee shall comply with the limit in either paragraph b)(2)h.i.(a) or (b). The permittee may comply with either limit at any time, provided that the appropriate parameters for each alternative are monitored as specified in 40 CFR 60.107a; if fuel gas composition is not monitored as specified in 40 CFR 60.107a(d), the permittee must comply with the concentration limits in paragraph b)(2)h.i. as follows.
 - (a) 40 ppmv (dry basis, corrected to 0-percent excess air) determined daily on a 30-day rolling average basis; or
 - (b) 0.040 pounds per million British thermal units (lb/MMBtu) higher heating value basis determined daily on a 30-day rolling average basis.

The permittee has elected to comply with NO_x limits in permit condition b)(2)h.i.(b). Therefore, the remaining monitoring and recordkeeping requirements in this permit are reflective of that compliance option. If the permittee decides to revise the compliance option at a later date as allowed by 40 CFR 60.102a(g)(2), this will be allowed upon notification to Ohio EPA. The permittee shall submit an administrative permit modification request to Ohio EPA prior to the change.

- i. It is assumed that all PE are equivalent to both PM₁₀ and PM_{2.5}.
- j. This permit establishes the following federally enforceable emission limitations for the purpose of representing the potential to emit of the emissions unit:
 - i. 0.0075 lb PE/PM₁₀/PM_{2.5}/million Btu of actual heat input and 21.23 tons of PE/PM₁₀/PM_{2.5}/yr; and
 - ii. 0.0054 lb VOC/million Btu of actual heat input and 15.29 tons of VOC/yr.



- k. Best Available Technology (BAT) requirements for NOx, CO and SO2 emissions under ORC 3704.03(T) have been determined to be compliance with the emission limitations and requirements established pursuant to OAC rule 3745-31-10 through 3745-31-20.
- l. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3), as effective June 30, 2008 has been determined to be the following federally enforceable emission limitations established pursuant to OAC rule 3745-31-05(D):
 - i. 0.0075 lb PM10/PM2.5/million Btu of actual heat input; and
 - ii. 0.0054 lb VOC/million Btu of actual heat input.
- m. The Best Available Technology (BAT) emission limits contained in b)(2)l. above apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

 It should be noted that the requirements of b)(2)j. above established pursuant to OAC rule 3745-31-05(D) will remain applicable after the above SIP revisions are approved by U.S. EPA.
- n. The requirements of b)(1)j. above apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the SIP.
- o. The permittee shall employ Best Available Control Technology (BACT) for this emissions unit. BACT has been determined to be the following:

Pollutant	BACT Requirements
NOx	Use of ultra-low NOx burners; Compliance with the 40 CFR, Part 60, Subpart Ja emission standard of 0.04 lb NOx/million Btu of actual heat input, based upon a 30 day rolling average; and Compliance with the NOx emission standard of 0.03 lb of NOx/million Btu of actual heat input, based upon a 365-day rolling average
SO2	Compliance with 40 CFR, Part 60, Subpart Ja: Compliance with hydrogen sulfide standards for refinery fuel gas, including 162 parts per million by volume, as a 3-hour rolling average (; or stack SO2 not to exceed 20 parts per million by volume, as a 3-hour rolling average, dry basis, corrected to zero percent

Pollutant	BACT Requirements
	<p>excess air; and</p> <p>60 parts per million by volume of H₂S, dry basis, as a 365-day rolling average; or stack SO₂ not to exceed 8 parts per million by volume, dry basis, corrected to zero percent excess air determined daily on a 365 successive calendar day rolling average basis</p>
CO	0.04 lb of CO/million Btu of actual heat input, based upon a 365-day rolling average, and based on good combustion practices
CO _{2e}	<p>Use of low-carbon gaseous fuels (refinery fuel gas or natural gas);</p> <p>Heat recovery through use of a convection section and boiler feed water preheating; and</p> <p>Excess oxygen monitoring and annual burner tuning and heater inspection</p>

- p. Pursuant to OAC rule 3745-110-01(B)(19), this emissions unit is an existing large boiler. The emissions limitations for NO_x in OAC rule 3745-110-03(C) are less stringent than the NO_x BACT emission limitation established pursuant to OAC rule 3745-31-10 through 3745-31-20.
- q. This permit maintains a facility requested NO_x emission limitation of 0.035 lb per million Btu of actual heat input initially established in PTI No. P0109701 in accordance with the requirements in the federal consent decree addendum, civil action No. SA07CA0683RF, which became effective on 11/20/07. The NO_x emission limitation of 0.035 lb per million Btu of actual heat input was reiterated as part of PTI No. P0116161 to reflect the final voluntary limits to meet a system-wide average NO_x performance level of 0.044 lb per million Btu per consent decree requirements.

The NO_x BACT emission limitation established pursuant to OAC rule 3745-31-10 through 3745-31-20 is more stringent than the NO_x emission limitation established as part of the federal consent decree addendum, civil action No. SA07CA0683RF.

c) Operational Restrictions

- (1) The permittee shall burn only refinery fuel gas or natural gas in this emissions unit. The sulfur content of the refinery fuel gas or natural gas burned in this emissions unit shall comply with the allowable SO₂ emission limitation specified in section b)(1).
- (2) A process heater or boiler in the Gas 1 subcategory with heat input capacity of 10 million Btu per hour or greater shall conduct an annual tune-up of the boiler or process heater as specified in 40 CFR 63.7540(a)(10)(i) through 63.7540(a)(10)(vi). This tune-up frequency does not apply to limited-use boilers and process heaters, as defined in

63.7575, or units with continuous oxygen trim systems that maintain an optimum air to fuel ratio.

- (3) A process heater or boiler in the Gas 1 subcategory that has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or meets the definition of limited-use boiler or process heater in 40 CFR 63.7575, shall conduct a tune-up of the boiler or process heater every 5 years as specified in 40 CFR 63.7540(a)(10)(i) through (vi) to demonstrate continuous compliance. You may delay the burner inspection specified in 40 CFR 63.7540(a)(10)(i) until the next scheduled or unscheduled unit shutdown, but you must inspect each burner at least once every 72 months.
 - (4) Pursuant to 40 CFR 63.7540(a)(13), if the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 calendar days of startup.
 - (5) The permittee shall have a one-time energy assessment performed by a qualified energy assessor, pursuant to work practice standards 4.a through 4.h in Table 3 of 40 CFR, Part 63, Subpart DDDDD. The subsequent report associated with this assessment shall be submitted no later than January 31, 2016.
- d) **Monitoring and/or Recordkeeping Requirements**
- (1) For each day during which the permittee burns a fuel other than refinery fuel gas or natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
 - (2) In order to demonstrate compliance with the emission limitations of:
 - a. 162 ppm H₂S, as a 3-hour rolling average. This H₂S standard in 40 CFR 60.102a(g)(1)(ii) is also applicable if the permittee combines and combusts natural gas in any proportion with refinery fuel gas in this emissions unit, according to the fuel gas definition in 40 CFR 60.101a; or stack SO₂ not to exceed 20 parts per million by volume, dry basis, corrected to zero percent excess air; and
 - b. 60 parts per million by volume of H₂S, dry basis, as a 365-day rolling average; or stack SO₂ not to exceed 8 parts per million by volume, dry basis, corrected to zero percent excess air.
 - (3) The permittee shall operate and maintain an instrument for continuously monitoring and recording the concentration (dry basis) of H₂S in the refinery fuel gas or combined fuel stream before being burned in this emissions unit. The monitoring shall be conducted in accordance with 40 CFR 60.107a(a)(2), as follows:
 - a. The span value for this instrument is 300 parts per million by volume of H₂S.
 - b. Fuel gas combustion devices having a common source of fuel gas may be monitored at only one location, if monitoring at this location accurately represents the concentration of H₂S in the fuel gas being burned.

- c. The performance evaluations for this H₂S monitor under 40 CFR 60.13(c) shall use Performance Specification 7 of 40 CFR, Part 60, Appendix B. The permittee shall conduct a relative accuracy test audit (RATA) for the H₂S continuous emission monitoring equipment at a minimum frequency of once every three years. Method 15 of 40 CFR, Part 60, Appendix A, or other approved U.S. EPA methods shall be used for conducting the RATAs.
- (4) A statement of certification of the existing H₂S continuous emission monitoring system (CEMS) shall be maintained on site and shall consist of a letter from the Ohio EPA detailing the results of an Agency review of the certification tests and a statement by the Agency that the system is considered certified in accordance with the requirements of 40 CFR, Part 60, Appendix B, Performance Specification 7. Proof of certification shall be made available to representatives of the Ohio EPA, Northwest District Office upon request.
- (5) The permittee shall operate and maintain existing equipment to continuously monitor and record H₂S from this emissions unit in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR, Part 60.13.

The permittee shall maintain records of all data obtained by the H₂S CEMS including, but not limited to, parts per million of H₂S for each cycle time of the analyzer, with no resolution less than one data point per minute required, emissions of H₂S in units of the applicable standard (parts per million by volume) as a rolling, 3-hour average, the results of daily zero/span calibration checks, and the magnitudes of manual calibration adjustments.

- (6) The permittee shall maintain a written quality assurance/quality control plan for the CEMS designed to ensure continuous valid and representative readings of H₂S. The plan shall follow the requirements of 40 CFR, Part 60, Appendix F.

A logbook dedicated to the monitoring systems 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, except as noted below.

Pursuant to paragraph No. 121 of the federal consent decree addendum, civil action No. SA07CA0683RF, dated 11/20/07, the permittee is required to:

- a. Conduct a relative accuracy test audit of the H₂S CEM at a minimum frequency of once every three years; and
 - b. Conduct cylinder gas audits on the H₂S CEM during each quarter when a relative accuracy test audit is not conducted.
- (7) Pursuant to the federal consent decree addendum, civil action No. SA07CA0683RF, dated 11/20/07 and 40 CFR, Part 60, Subpart Ja, the permittee shall install, operate, and

maintain equipment to continuously monitor and record NO_x emissions from this emissions unit, in units of parts per million by volume, on a dry basis. The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13.

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

- a. emissions of NO_x 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 NO_x in all units of the applicable standard(s) in the appropriate averaging period;
 - 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 NO_x 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 NO_x 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 NO_x monitoring system; as well as,
 - i. the reason (if known) and the corrective actions taken (if any) for each such event in d)(7)g. and d)(7)h.
- (8) The permittee shall maintain on-site, the document of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous NO_x monitoring system has been certified to meet the requirements of 40 CFR, Part 60, Appendix B, Performance Specification 2. The letter/document of certification shall be made available to the Director (the Ohio EPA, Northwest District Office) upon request.

Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

- (9) The permittee shall maintain a written quality assurance/quality control plan for the continuous NO_x monitoring system designed to ensure continuous valid and representative readings of NO_x 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 NOx 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, except as noted below.

Pursuant to paragraph No. 30 of the federal consent decree addendum, civil action No. SA07CA0683RF, dated 11/20/07, the permittee is required to:

- a. Conduct a relative test audit of the NOx CEM at a minimum frequency of once every three years; and
 - b. Conduct cylinder gas audits on the NOx CEM during each quarter when a relative accuracy test audit is not conducted.
- (10) Pursuant to the federal consent decree addendum, civil action No. SA07CA0683RF, dated 11/20/07, the permittee shall install, operate and maintain equipment to continuously monitor and record oxygen (O₂) emitted from this emissions unit, in units of percent O₂. The continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR, Part 60.

The permittee shall maintain records of data obtained by the continuous O₂ monitoring system including, but not limited to:

- a. percent O₂ for each cycle time of the analyzer, with no resolution less than one data point per minute required;
 - 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);
 - e. hours of operation of the emissions unit, continuous O₂ monitoring system;
 - f. the date, time, and hours of operation of the emissions unit without the continuous O₂ monitoring system;
 - g. the date, time, and hours of operation of the emissions unit during any malfunction of the continuous O₂ monitoring system; as well as,
 - h. the reason (if known) and the corrective actions taken (if any) for each such event in d)(10)f. and d)(10)g.
- (11) The permittee shall maintain on-site, the document of certification received from the U.S. EPA or the Ohio EPA's Central Office documenting that the continuous O₂ monitoring system has been certified to meet the requirements of 40 CFR, Part 60, Appendix B,

Performance Specification 3. The letter/document of certification shall be made available to the Director (the Ohio EPA, Northwest District Office) upon request.

Each continuous monitoring system consists of all the equipment used to acquire and record data in units of all applicable standard(s), and includes the sample extraction and transport hardware, sample conditioning hardware, analyzers, and data processing hardware and software.

- (12) The permittee shall maintain a written quality assurance/quality control plan for the continuous O₂ monitoring system designed to ensure continuous valid and representative readings of O₂ 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 O₂ 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, except as noted below.

Pursuant to paragraph No. 30 of the federal consent decree addendum, civil action No. SA07CA0683RF, dated 11/20/07, the permittee is required to:

- a. Conduct a relative accuracy test audit of the O₂ CEM at a minimum frequency of once every three years; and
- b. Conduct cylinder gas audits on the O₂ CEM during each quarter when a relative accuracy test audit is not conducted.

- (13) The permittee shall record the following for this emissions unit:

- a. the volume, in million standard cubic feet, of refinery fuel gas and natural gas combusted per month;
- b. the volume, in million standard cubic feet, of refinery fuel gas and natural gas combusted per rolling, 12-month period;
- c. the CO₂e emissions from the combustion of refinery fuel gas and natural gas for each month of operation, in tons (short tons), quantified in accordance with the calculation methodologies outlined in 40 CFR Part 98 and using global warming potential (GWP) values from Table A-1 in 40 CFR Part 98 Subpart A as such table was published in 74 FR 56374, Oct. 30, 2009. (It should be noted that 40 CFR Part 98.33 quantifies GHG emissions in metric tons and emissions must be converted to short tons for purposes of this monitoring and recordkeeping requirement due to the establishment of BACT limitations involving short ton thresholds);
- d. the rolling 12-month CO₂e emissions from refinery fuel gas and natural gas combustion, in tons (short tons);

- e. heater design documents; and
- f. heater maintenance activities, as completed.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than refinery fuel gas or natural gas was burned in this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (2) The permittee shall submit reports within thirty (30) days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting any H2S CEMS downtime 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 source 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 the quarterly report.

- (3) The permittee shall submit reports within thirty (30) days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting any NOx CEMS downtime 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 source 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 the quarterly report.

- (4) The permittee shall submit reports within thirty (30) days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting any O2 CEMS downtime 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 source 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 the quarterly report.

- (5) The permittee shall notify the Director (the Ohio EPA, Northwest District Office) on a quarterly basis, in writing, of:

- a. All rolling, 3-hour periods during which the average concentration of H2S as measured by the H2S CEMS under 40 CFR 60.107a(a)(2) exceeds 162 parts per million by volume. The rolling, 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.

- b. All rolling, 365-day periods during which the average concentration of H₂S as measured by the H₂S CEMS under 40 CFR 60.107(a)(2) exceeds 60 parts per million by volume, dry basis. The rolling, 365-day average shall be determined as the arithmetic average of 365 contiguous daily averages.
- c. All rolling, 30-day periods during which the average emissions of NO_x as measured by the NO_x CEMS under 40 CFR 60.13 exceeds 0.04 lb NO_x/million Btu of actual heat input. The rolling, 30-day average shall be determined as the arithmetic average of 30 contiguous daily averages.
- d. All exceedances of the 342,112 tons per rolling, 12-month period emission limitation for CO₂e emissions.

The notification shall include a copy of the record and shall be sent to the Director (the Ohio EPA, Northwest District Office) by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during previous calendar quarters.

- (6) If there are no concentrations of H₂S in the refinery fuel gas (or combined fuel stream, if applicable) greater than 230 mg/dscm (0.10 grain/dscf)(the equivalent concentration is 162 parts per million by volume), as a 3-hour rolling average; or 60 parts per million by volume of H₂S, as a 365-day rolling average; or 0.04 lb NO_x/million Btu of actual heat input, as a 30-day rolling average, during the calendar quarter, then the permittee shall submit a statement to that effect along with the emissions unit and monitor operating times.

These quarterly reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during previous calendar quarters.

- (7) Pursuant to the 40 CFR Part 60.7, the permittee is hereby advised of the requirement to report the following at the appropriate times:
 - a. Construction date (no later than 30 days after such date);
 - b. Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
 - c. Actual start-up date (within 15 days after such date); and
 - d. Date of performance testing (if required, at least 30 days prior to testing).

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

Applicable Compliance Method:

If required, the permittee shall demonstrate compliance with the visible particulate emission limitation above in accordance with the methods and procedures specified in Method 9 of 40 CFR, Part 60, Appendix A, and the requirements specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

230 mg/dscm (0.10 grain/dscf)(the equivalent concentration is 162 parts per million by volume) of H₂S, as a 3-hour rolling average, in the refinery fuel gas, or combined fuel stream if applicable

Applicable Compliance Method:

Compliance shall be based upon the monitoring and record keeping requirements specified in sections d)(2) through d)(5) for this emissions unit. If required, the permittee shall determine compliance with the H₂S emission limitation by using Method 15 of 40 CFR, Part 60, Appendix A, or other U.S. EPA-approved methods.

c. Emission Limitation:

60 parts per million by volume of H₂S, dry basis, as a 365-day rolling average, in the refinery fuel gas, or combined fuel stream if applicable

Applicable Compliance Method:

Compliance shall be based upon the monitoring and record keeping requirements specified in sections d)(2) through d)(5) for this emissions unit. If required, the permittee shall determine compliance with the H₂S emission limitation by using Method 15 of 40 CFR, Part 60, Appendix A, or other approved U.S. EPA methods.

d. Emission Limitation:

0.0075 lb of PE/PM₁₀/PM_{2.5}/million Btu of actual heat input and 21.23 tons of PE/PM₁₀/PM_{2.5}/yr

Applicable Compliance Method:

The PE/PM₁₀/PM_{2.5} emission limitation above was developed by dividing the PM₁₀/PM_{2.5} emission factor from AP-42, Table 1.4-2 (dated 7/98) (7.6 lb/mm scf) by the average heating value for natural gas specified in AP-42, Table 1.4-2 (dated 7/98) (1,020 Btu/scf). Compliance is presumed by only using gaseous fuels as required in C.1.(c)(1).

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Methods 201, 201A and 202 of 40 CFR, Part 51,

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

The annual emission limitation was established by multiplying the lb/million Btu emission limitation by the design heat input (646.3 million Btu/hr), then multiplying by the maximum operating schedule of 8,760 hrs/yr and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/million Btu emission limitation, compliance with the annual emission limitation shall also be demonstrated.

e. Emission Limitations:

0.0054 lb of VOC/million Btu of actual heat input and 15.29 tons of VOC/yr

Applicable Compliance Method:

The VOC emission limitation above was developed by dividing the VOC emission factor from AP-42, Table 1.4-2 (dated 7/98) (5.5 lb/mmscf) by the average heating value for natural gas specified in AP-42, Table 1.4-2 (dated 7/98) (1,020 Btu/scf). Compliance is presumed by only using gaseous fuels as required in C.1.(c)(1).

If required, the permittee shall demonstrate compliance with the hourly emission limitation by conducting emission testing in accordance with the methods and procedures specified in Methods 1 through 4, and 18, 25, or 25A, as appropriate, of 40 CFR, Part 60, Appendix A.

Use of Method 18, 25, or 25A is to be selected based on the results of a pre-survey stack sampling and U.S. EPA guidance documents. Alternative U.S. EPA-approved test methods may be used with prior approval from Ohio EPA.

The annual emission limitation was established by multiplying the lb/million Btu emission limitation by the design heat input (646.3 million Btu/hr), and then multiplying by the maximum operating schedule of 8,760 hrs/yr and dividing by 2,000 lbs/ton. Therefore, provided compliance is shown with the lb/million Btu emission limitation, compliance with the annual emission limitation shall also be demonstrated.

f. Emission Limitations:

0.03lb NOx/million Btu of actual heat input based upon a 365-day rolling average,
0.04lb NOx/million Btu of actual heat input based upon a 30-day rolling average,
and 84.92 tons NOx/rolling, 12-month period

Applicable Compliance Method:

Ongoing compliance with the NOx emission limitation(s) shall be demonstrated through the data collected as required in the Monitoring and Recordkeeping Section of this permit; and through demonstration of compliance with the quality

assurance/quality control plan, which shall meet the requirements of 40 CFR, Part 60.

The rolling, 12-month emission limitation was established by multiplying the 0.03 lb NO_x/million Btu of actual heat input emission limitation by the maximum heat input of 646.3 million Btu/hr, then multiplying by the maximum annual hours of operation (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, compliance is shown using the data collected as required in the Monitoring and Record keeping Section of this permit.

g. Emission Limitations:

0.04 lb of CO/million Btu of actual heat input based upon a 365-day rolling average and 113.23 tons CO/rolling, 12-month period

Applicable Compliance Method:

The permittee shall demonstrate compliance with the lb CO/million Btu of actual heat input emission limitation by conducting emission testing pursuant to Methods 1 through 4, and 10 of 40 CFR, Part 60, Appendix A.

The rolling, 12-month emission limitation was established by multiplying the 0.04 lb CO/million Btu of actual heat input emission limitation by the maximum heat input of 646.3 million Btu/hr, then multiplying by the maximum annual hours of operation (8,760 hrs/yr) and dividing by 2,000 pounds per ton. Therefore, provided compliance is shown with the lb/million Btu of actual heat input emission limitation, compliance with the rolling, 12-month period emission limitation shall also be demonstrated.

h. Emission Limitation:

70.04 tons of SO₂/rolling, 12-month period

Applicable Compliance Method:

Compliance shall be based upon the fuel flow and the H₂S monitoring and record keeping requirements specified in sections d)(2) through d)(5) plus a 50 ppmv allowance for non-H₂S sulfur based on EPA published refinery test data, or more recent test value if future testing is performed. If required, the permittee shall determine compliance with the SO₂ emission limitation by using Method 6 of 40 CFR, Part 60, Appendix A, or other U.S. EPA-approved methods.

i. Emission Limitation:

CO₂e emissions shall not exceed 342,112 tons per rolling, 12-month period.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and record keeping requirements specified in section d)(13) for this emissions unit.

- (2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit.
 - b. The emission testing shall be conducted to demonstrate compliance with the lb of CO/million Btu of actual heat input limitation.
 - c. The following test methods shall be employed to demonstrate compliance with the allowable CO mass emission rate: Methods 1 through 4, and 10 of 40 CFR, Part 60, Appendix A.

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

- d. The test(s) shall be conducted at a Maximum Source Operating Rate (MSOR), unless otherwise specified or approved by the Ohio EPA, Northwest District Office. MSOR is defined as the condition that is most likely to challenge the emission control measures with regards to meeting the applicable emission standard(s). Although it generally consists of operating the emissions unit at its maximum material input/production rates and results in the highest emission rate of the tested pollutant, there may be circumstances where a lower emissions loading is deemed the most challenging control scenario.

Failure to test at the MSOR is justification for not accepting the test results as a demonstration of compliance.

- e. 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, Northwest 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, Northwest District Office's refusal to accept the results of the emission test(s).

- f. Personnel from the Ohio EPA, Northwest 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.
- g. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Northwest District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written

report, where warranted, with prior approval from the Ohio EPA, Northwest District Office.

- h. Within 60 days of achieving the maximum production rate at which the emissions unit(s) will be operated, but not later than 180 days after initial startup, the permittee shall conduct certification tests of the continuous NOx monitoring system in units of the applicable standard(s) to demonstrate compliance with 40 CFR, Part 60, Appendix B, Performance Specifications 2; and ORC section 3704.03(I).

Personnel from the Ohio EPA Central Office and the Ohio EPA Northwest 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 Northwest District Office and one copy to Ohio EPA Central Office, and pursuant to OAC rule 3745-15-04, within 30 days after the test is completed.

Certification of the continuous NOx 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, Performance Specifications 2; and ORC section 3704.03(I).

g) Miscellaneous Requirements

- (1) None.

2. P050, Acid Gas Flare

Operations, Property and/or Equipment Description:

Sulfur Recovery Units Acid Gas Flare, non-assisted

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

(1) None.

b) Applicable Emissions Limitations and/or Control Requirements

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

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(D)	0.25 ton particulate emissions/ particulate matter less than or equal to 10 microns in diameter/particulate matter less than or equal to 2.5 microns in diameter (PE/PM ₁₀ /PM _{2.5})/yr from pilot and sweep gas firing only 18.80 ton volatile organic compounds (VOC)/yr from pilot and sweep gas firing only 1.00 ton of NOx/yr during periods of processunit start-up and shutdown 100.00 tons of SO ₂ /yr during periods of processunit start-up and shutdown See b)(2)a. and b)(2)b.
b.	OAC rule 3745-31-05(A)(3), as effective June 30, 2008	See b)(2)c. and b)(2)d.
c.	OAC rule 3745-31-05(A)(3)(a)(ii), as effective June 30, 2008	The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM ₁₀ and VOC emissions from this air contaminant source since the potential to emit is less than 10 tons/yr taking into account the federally enforceable restrictions in b)(1)a.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM10 and VOC emissions from this air contaminant source since the potential to emit is less than 10 tons/yr taking into account the Best Available Control Measures (BACT) restrictions in b)(1)h.</p> <p>See b)(2)e.</p>
d.	ORC 3704.03(T)	See b)(2)f.
e.	40 CFR, Part 60.18	See b)(2)h.
f.	40 CFR, Part 60, Subpart Ja	See b)(2)i.
g.	40 CFR, Part 60, Subpart A	See 40 CFR 60.1 through 60.19
h.	OAC rules 3745-31-10 through 3745-31-20	<p>2.24 ton nitrogen oxides (NO_x)/rolling, 12-month period from pilot and sweep gas firing only</p> <p>0.02 ton sulfur dioxide (SO₂)/rolling, 12-month period from pilot and sweep gas firing only</p> <p>10.22 ton carbon monoxide (CO)/rolling, 12-month period from pilot and sweep gas firing only</p> <p>Carbon dioxide equivalents (CO₂e) emissions shall not exceed 3860 tons per rolling, 12-month period from pilot and sweep gas firing only</p> <p>See b)(2)j.</p>

(2) Additional Terms and Conditions

- a. It is assumed that all PE are equivalent to both PM₁₀ and PM_{2.5}.
- b. This permit establishes the following federally enforceable emission limitations for the purpose of representing the potential to emit of the emissions unit:
 - i. 0.25 ton PE/PM₁₀/PM_{2.5}/yr from pilot and sweep gas firing only;
 - ii. 18.80 ton VOC/yr from pilot and sweep gas firing only;
 - iii. 1.00 ton of NO_x/yr during periods of process unit start-up and shutdown; and

- iv. 100.00 tons of SO₂/yr during periods of process unit start-up and shutdown.

The emission limitations for NO_x and SO₂ during start-up and shutdown were established to alleviate reporting requirements associated with reportable quantities (RQ) under the Superfund Amendments and Reauthorization Act (SARA). The allowable limitations above do not apply to emissions associated with malfunctions and/or process upsets of the process unit. Any SO₂ emissions associated with the start-up and shutdown of the sulfur recovery units at the facility (emissions units P040 and P049, upon completion) that are routed to this flare must still be applied to the emissions limitation of 100 lbs SO₂/1,000 lbs of sulfur processed contained in OAC rule 3745-18-08(C)(3).

- c. The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3), as effective June 30, 2008 has been determined to be the following federally enforceable emission limitations established pursuant to OAC rule 3745-31-05(D):
 - i. 0.25 ton PM₁₀/PM_{2.5}/yr from pilot sweep gas firing only; and
 - ii. 18.80 ton VOC/yr from pilot and sweep gas firing only.

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3), as effective June 30, 2008 has been determined to be the following emission limitations established pursuant to OAC rule 3745-31-10 through 3745-31-20:

- i. 2.24 ton NO_x/rolling, 12-month period from pilot and sweep gas firing only.
- d. The Best Available Technology (BAT) emission limits contained in b)(2)b. above apply until U.S. EPA approves Ohio Administrative Code (OAC) paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) into the Ohio State Implementation Plan (SIP).

It should be noted that the requirements of b)(2)c. above established pursuant to OAC rule 3745-31-05(D) and OAC rule 3745-31-10 through 3745-31-20 will remain applicable after the above SIP revisions are approved by U.S. EPA.

- e. The requirements of b)(1)c. above apply once U.S. EPA approves OAC paragraph 3745-31-05(A)(3)(a)(ii) (the less than 10 tons per year BAT exemption) as part of the SIP.
 - f. Best Available Technology (BAT) requirements for CO and SO₂ emissions under ORC 3704.03(T) have been determined to be compliance with the emission limitations and requirements established pursuant to OAC rule 3745-31-10 through 3745-31-20.

- g. This flare will be used to control H₂S emissions in the feed stream to the sulfur recovery units (Claus 1, Claus 2 and Claus 3 units, upon completion) emissions units P040 and P049, upon completion, during periods of start-up, shutdown and malfunction of those emissions units and associated equipment. The Claus sulfur recovery units are subject to MACT standards in 40 CFR, Part 63, Subpart UUU, but this flare as a control device for the amine units that feed the Claus units is not an affected source to the requirements of Subpart UUU.
- h. This emissions unit shall be designed for and operated with no visible emissions except for periods not to exceed a total of 5 minutes during any 2 consecutive hours.
- i. The permittee shall comply with the following requirements in 40 CFR, Part 60, Subpart Ja for new flares:
 - i. Develop and implement a written flare management plan in accordance with 40 CFR 60.103a(a)(1) through (7);
 - ii. Conduct a root cause analysis and corrective action plan whenever the discharge to the flare exceeds 500,000 standard cubic feet above the baseline in any 24-hour period;
 - iii. Any fuel gas burned shall not exceed a maximum of 162 parts per million by volume hydrogen sulfide content, as determined hourly on a 3-hour rolling average basis. This limit does not apply to process upset gases, fuel gas that is released to the flare as a result of relief valve leakage, or other emergency malfunctions; and
 - iv. Install, operate, calibrate and maintain a monitor to continuously measure and record the flow rate of gas discharged to the flare.
- j. The permittee shall employ Best Available Control Technology (BACT) for this emissions unit. BACT has been determined to be the following:

Pollutant	BACT Requirements
NO _x	Use of good combustion practices
SO ₂	Use of natural gas or refinery fuel gas for the flare pilot flame and sweep gases, and implementation of a load shedding plan to minimize periods of gas release from the sulfur recovery units (Claus 1, Claus 2 and Claus 3 units, upon completion) to the acid gas flare
CO	Use of good combustion practices
CO ₂ e	Use of low-carbon gaseous fuels (refinery fuel gas or natural gas) in the flare's pilot and sweep gases

c) Operational Restrictions

- (1) The flare shall be operated at all times when emissions are being vented to it.
- (2) The flare shall be operated with a pilot flame present at all times.
- (3) The flare shall be operated using good combustion practices as BACT which shall be demonstrated by complying with the following flare requirements of 40 CFR 60.18 (although 40 CFR 60.18 is not otherwise applicable).
- (4) Only gases with a net heating value of 7.45 MJ/scm (200 Btu/scf) or greater shall be burned in this emissions unit. Net heating value shall be calculated as specified in 40 CFR Part 60.18(f)(3).

The flare shall be operated with an exit velocity less than 18.3 m/sec (60 ft/sec) except as specified in sections c)(4) and c)(5).

- (5) If the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf), the permittee may operate the flare at an exit velocity equal to or greater than 18.3 m/sec (60 ft/sec), but less than 122 m/sec (400 ft/sec).
- (6) Non-assisted flares may be operated with an exit velocity less than the maximum permitted velocity, but not greater than 122 m/sec (400 ft/sec). The maximum permitted velocity shall be determined in accordance with 40 CFR, Part 60.18(f)(5).

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall collect and record the following information during periods of start-up and shut-down:
 - a. the flare flow rate, in scf per hour;
 - b. the high heating value, in Btu/scf, as determined from the flare gas molecular weight and source of the gas;
 - c. the concentration of hydrogen sulfide in the flare gas, in weight fraction;
 - d. an indication of which process is undergoing start-up/shut-down mode;
 - e. the number of hours the process operated in start-up/shut-down mode;
 - f. the calculated NO_x emissions using the following equation:

$$E = (FR) \times (HV) \times (T) \times (EF) / 1,000,000$$

Where:

E = NO_x emissions in tons for each individual start-up and shut-down event;

FR = flare flow rate in scf per hour;

HV = high heating value, in Btu/scf;

T = time duration for each start-up/shut down event, in hours; and

EF = NO_x emission factor of 0.068 lb of NO_x/mmBtu (AP-42 Section 13.5, Industrial Flares [4/15])

- g. the annual NO_x emission rate calculated as follows:

$$ET = E1 + E2 + E3 + \dots + En$$

Where:

ET = Annual NO_x emissions, in tons, as summed for the calendar year from January to December; and

En = NO_x emissions, in tons, for each individual start-up/shut-down event during the calendar year

- h. the calculated SO₂ emissions using the following equation:

$$E = \{(FR) \times (H_2S)\} / 379.7 \times (0.98) \times (64) \times (T)$$

where:

E = SO₂ emissions in tons for each individual start-up and shut-down event;

FR = flare flow rate in scf per hour;

H₂S = volume fraction of hydrogen sulfide in flare gas;

379.7 = the volume, in ft³, of one lb mole of gas at standard conditions (60 degrees F & 1 atm) from the ideal gas law;

0.98 = efficiency of the flare for converting a lb mole of H₂S into a lb mole of SO₂;

64 = molecular weight of SO₂ in lb/lb mole; and

T = time duration for each start-up/shut down event, in hours

- i. the annual SO₂ emission rate calculated as follows:

$$ET = E1 + E2 + E3 + \dots + En$$

Where:

ET = Annual SO₂ emissions, in tons, as summed for the calendar year from January to December; and

En = SO₂ emissions, in tons, for each individual start-up/shut-down event during the calendar year

- (2) The permittee shall operate and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorders shall be calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals. The monitoring device must complete a minimum of one cycle of operation for each successive 15-minute period.

The permittee shall record the following information each day:

- a. all periods during which there was no pilot flame; and
 - b. the downtime for the flare and monitoring equipment.
- (3) The permittee shall continuously monitor either visually and/or by camera whether or not there are visible emissions from the flare. Whenever the permittee observes visible emissions from the flare, the permittee shall record the start-time and end-time of visible emissions in an operations log.

e) Reporting Requirements

- (1) The permittee shall submit deviation (excursion) reports that identify all periods during which the flare pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period. The quarterly deviation reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
- (2) The permittee shall submit quarterly deviation reports that include the start-time and end-time of visible emissions observed from the flare that exceed a total time of five minutes during any consecutive two hour period. The quarterly deviation reports shall be submitted by January 30, April 30, July 30, and October 30 of each year and shall address the data obtained during the previous calendar quarter.
- (3) The permittee shall submit annual reports that summarize the total annual actual emissions of NO_x and SO₂ during periods of process unit start-up and shutdown. The report shall be submitted by January 31 of each year and shall cover the previous calendar year.

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:
0.25 ton PE/PM₁₀/PM_{2.5}/yr from the flare's pilot and sweep gases

Applicable Compliance Method:

The annual emission limitation above represents the potential to emit [see b)(2)b.] based on an emission factor of 0.0075 lb of PE/PM₁₀/PM_{2.5}/million Btu* multiplied by a maximum heat input to the flare's pilot and sweep gases of 7.529 million Btu/hr, multiplied by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton.

*The emission factor was determined in accordance with AP-42, Table 1.4-2 (7/98).

b. Emission Limitation:

18.80 ton VOC/yr from the flare's pilot and sweep gases

Applicable Compliance Method:

The annual emission limitation above represents the potential to emit [see b)(2)b.] based on an emission factor of 0.57 lb of VOC/million Btu* multiplied by a maximum heat input to the flare's pilot and sweep gases of 7.529 million Btu/hr, multiplied by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton.

*The emission factor was determined in accordance with AP-42, Table 13.5-2 (4/15).

c. Emission Limitation:

1.00 ton of NO_x/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual NO_x emission limitation shall be demonstrated through recordkeeping requirements in section d)(1).

d. Emission Limitation:

100.00 tons of SO₂/yr during periods of process unit start-up and shutdown

Applicable Compliance Method:

Compliance with the annual SO₂ emission limitation shall be demonstrated through recordkeeping requirements in section d)(1).

e. Emission Limitation:

No visible emissions except for periods not to exceed a total of five minutes during any two consecutive hours

Applicable Compliance Method:

If required, compliance with the no VE limitation above shall be demonstrated based upon the procedures specified in Method 22 of 40 CFR, Part 60, Appendix A.

f. Emission Limitation:

2.24 ton NO_x/rolling, 12-month period from the flare's pilot and sweep gases

Applicable Compliance Method:

The rolling, 12-month limitation above represents the potential to emit [see b)(2)j.] based on an emission factor of 0.068 lb of NO_x/million Btu* multiplied by a maximum heat input of 7.529 million Btu/hr from the flare's pilot and sweep gases, multiplied by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton.

*The emission factor was determined in accordance with AP-42, Table 13.5-1 (4/15).

g. Emission Limitation:

0.02 ton SO₂/rolling, 12-month period from the flare's pilot and sweep gases

Applicable Compliance Method:

The rolling, 12-month limitation above represents the potential to emit [see b)(2)j.] based on an emission factor of 0.0006 lb of SO₂/million Btu* multiplied by a maximum heat input of 7.529 million Btu/hr from the flare's pilot and sweep gases, multiplied by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton.

*The emission factor was determined in accordance with AP-42, Table 1.4-2 (7/98).

h. Emission Limitation:

10.22 ton CO/rolling, 12-month period from the flare's pilot and sweep gases

Applicable Compliance Method:

The rolling, 12-month limitation above represents the potential to emit [see b)(2)j.] based on an emission factor of 0.31 lb of CO/million Btu* multiplied by a maximum heat input of 7.529 million Btu/hr from the flare's pilot and sweep gases, multiplied by the maximum operating schedule of 8,760 hrs/yr, and then dividing by 2,000 lbs/ton.

*The emission factor was determined in accordance with AP-42, Table 13.5-2 (4/15).



i. Emission Limitation:

CO₂e emissions shall not exceed 3860 tons per rolling, 12-month period from pilot and sweep gas firing only

Applicable Compliance Method:

The rolling, 12-month limitation above represents the potential to emit [see b)(2)j.] based on an emission factor of 53.02 kg of CO₂/million Btu* multiplied by a conversion factor of 2.204 lbs/kg, times the maximum heat input of 7.529 million Btu/hr from the flare's pilot and sweep gases, multiplied by the maximum operating schedule of 8,760 hrs/yr and dividing by 2,000 lbs/ton.

*The emission factor was determined in accordance with 40 CFR, Part 98, Table C-1, natural gas, global warming potential (GWP) from Table A-1.

g) Miscellaneous Requirements

(1) None.