



Environmental Protection Agency

John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

3/14/2011

Certified Mail

Charles Gasperetti
ISP
1220 South Metcalf Street
Lima, OH 45804

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0302020343
Permit Number: P0107710
Permit Type: OAC Chapter 3745-31 Modification
County: Allen

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

Dear Permit Holder:

A draft of the Ohio Administrative Code (OAC) Chapter 3745-31 Air Pollution Permit-to-Install for the referenced facility has been issued for the emissions unit(s) listed in the Authorization section of the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the permit. A public notice will appear in the Ohio EPA Weekly Review and the local newspaper, The Lima News. A copy of the public notice and the draft permit are enclosed. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Issued Air Pollution Control Permits" link. Comments will be accepted as a marked-up copy of the draft permit or in narrative format. Any comments must be sent to the following:

Andrew Hall
Permit Review/Development Section
Ohio EPA, DAPC
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, Ohio 43216-1049

and Ohio EPA DAPC, Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Ohio EPA DAPC, Northwest District Office at (419)352-8461.

Sincerely,

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

Cc: U.S. EPA Region 5 - Via E-Mail Notification
Ohio EPA-NWDO; Indiana

PUBLIC NOTICE
Issuance of Draft Air Pollution Permit-To-Install
ISP

Issue Date: 3/14/2011
Permit Number: P0107710
Permit Type: OAC Chapter 3745-31 Modification
Permit Description: Chapter 31 modification to account for increased emissions from emissions units N006, the scrubber offgas boiler, and P801, the flare associated with the butanediol manufacturing plant, associated with the installation of the new tetrahydrofuran recovery process and storage tanks (permitted under P0103657)
Facility ID: 0302020343
Facility Location: ISP
1220 South Metcalf Street,
Lima, OH 45804
Facility Description: All Other Basic Organic Chemical Manufacturing

Scott J. Nally, Director of the Ohio Environmental Protection Agency, 50 West Town Street, Columbus Ohio, has issued a draft action of an air pollution control permit-to-install (PTI) for an air contaminant source at the location identified above on the date indicated. Installation of the air contaminant source may proceed upon final issuance of the PTI. Comments concerning this draft action, or a request for a public meeting, must be sent in writing no later than thirty (30) days from the date this notice is published. All comments, questions, requests for permit applications or other pertinent documentation, and correspondence concerning this action must be directed to Andrea Moore at Ohio EPA DAPC, Northwest District Office, 347 North Dunbridge Road, Bowling Green, OH 43402 or (419)352-8461. The permit can be downloaded from the Web page: www.epa.ohio.gov/dapc



DRAFT

**Division of Air Pollution Control
Permit-to-Install
for
ISP**

Facility ID: 0302020343
Permit Number: P0107710
Permit Type: OAC Chapter 3745-31 Modification
Issued: 3/14/2011
Effective: To be entered upon final issuance



Division of Air Pollution Control
Permit-to-Install
for
ISP

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Authorization

Facility ID: 0302020343
Facility Description: Industrial Organic Chemicals, n.e.c.
Application Number(s): A0003520
Permit Number: P0107710
Permit Description: Chapter 31 modification to account for increased emissions from emissions units N006, the scrubber offgas boiler, and P801, the flare associated with the butanediol manufacturing plant, associated with the installation of the new tetrahydrofuran recovery process and storage tanks (permitted under P0103657)
Permit Type: OAC Chapter 3745-31 Modification
Permit Fee: \$2,000.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 3/14/2011
Effective Date: To be entered upon final issuance

This document constitutes issuance to:

ISP
1220 South Metcalf Street
Lima, OH 45804

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

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

Ohio EPA DAPC, 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

Scott J. Nally
Director



Authorization (continued)

Permit Number: P0107710

Permit Description: Chapter 31 modification to account for increased emissions from emissions units N006, the scrubber offgas boiler, and P801, the flare associated with the butanediol manufacturing plant, associated with the installation of the new tetrahydrofuran recovery process and storage tanks (permitted under P0103657)

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

Emissions Unit ID:	N006
Company Equipment ID:	SOGB
Superseded Permit Number:	03-17448
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	P801
Company Equipment ID:	Various Sources
Superseded Permit Number:	03-17448
General Permit Category and Type:	Not Applicable



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) The permittee must comply with all terms and conditions of this permit. 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 (i.e., postmarked) 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) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) 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.
- c) 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.
- d) 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 (i.e., postmarked) 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).

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 party 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 Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying 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.

No emissions unit certified by the authorized official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31.

- 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 the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

13. Construction Compliance Certification

The applicant shall identify the following dates in the online 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 (i.e., postmarked), 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.

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. This facility is subject to 40 CFR, Part 60, Subpart Db, New Source Performance Standards: Industrial-Commercial-Institutional Steam Generating Units. The permittee shall comply with all applicable requirements of 40 CFR, Part 60, Subpart Db. 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, Subparts Db and Subpart A. 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 appropriate Ohio EPA District office or local air agency.
3. This facility is subject to 40 CFR, Part 63, Subpart F, National Emission Standards for Hazardous Air Pollutants: Synthetic Organic Chemical Manufacturing Industry. The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart F. The permittee shall also comply with all applicable requirements of 40 CFR, Part 63, Subpart A (General Provisions) as identified in 40 CFR, Part 63, Subpart F. Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 63, Subparts F and Subpart A. The NESHAP 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 appropriate Ohio EPA District office or local air agency.
4. This facility is subject to 40 CFR, Part 63, Subpart G, National Emission Standards for Hazardous Air Pollutants: Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations and Wastewater. The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart G. The permittee shall also comply with all applicable requirements of 40 CFR, Part 63, Subpart A (General Provisions) as identified in 40 CFR, Part 63, Subpart G. Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 63, Subparts G and Subpart A. The NESHAP 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 appropriate Ohio EPA District office or local air agency.
5. This facility is subject to 40 CFR, Part 63, Subpart H, National Emission Standards for Hazardous Air Pollutants: Equipment Leaks. The permittee shall comply with all applicable requirements of 40 CFR, Part 63, Subpart H. The permittee shall also comply with all applicable requirements of 40 CFR, Part 63, Subpart A (General Provisions) as identified in 40 CFR, Part 63, Subpart H. Compliance with all applicable requirements shall be achieved by the dates set forth in 40 CFR, Part 63, Subparts H and Subpart A. The NESHAP 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 appropriate Ohio EPA District office or local air agency.

C. Emissions Unit Terms and Conditions



1. N006, SOGB

Operations, Property and/or Equipment Description:

Scrubber Offgas Boiler associated with Tetrahydrofuran Recovery Process

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

(1) d)(10), d)(11) and d)(12)

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
	OAC rule 3745-31-05(D)	<p>63.0 lbs of volatile organic compounds (VOC)/hr and 276.0 tons VOC/yr</p> <p>205.4 lbs of carbon monoxide (CO)/hr and 900.0 tons CO/yr</p> <p>25.4 lbs of nitrogen oxides (NOx)/hr, based upon a rolling, 24-hour average and 111.3 tons NOx/yr</p> <p>5.5 lbs of sulfur dioxide (SO2)/hr, based upon a 30-day rolling average and 24.2 tons SO2/yr</p> <p>6.4 lbs of particulate emissions (PE)/hr and 28.0 tons PE/yr</p> <p>Visible PE shall not exceed 10% opacity, as a 6-minute average.</p> <p>The permittee shall not burn in this emissions unit any fuel gas that contains hydrogen sulfide (H2S) in excess of 162 ppm, as a rolling, 3-hour average. This concentration is equivalent to 230 mg H2S/dscm.</p> <p>See b)(2)a. and c)(1)</p>
	ORC 3704.03(T)	See b)(2)b.
	OAC rule 3745-17-07(A)	See b)(2)c.



Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
OAC rule 3745-17-09	See b)(2)c.
OAC rule 3745-18-06	See b)(2)c.
OAC rule 3745-21-07(G)	See b)(2)d.
OAC rule 3745-21-09(DD)	See b)(2)e.
40 CFR, Part 60, Subpart Db (40 CFR 60.40b – 60.49b)	See b)(2)f., c)(5), d)(13), e)(9) and f)(3)
40 CFR, Part 60, Subpart VV (40 CFR 60.48 – 60.489)	See b)(2)e.
40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)	See c)(6), d)(14), e)(10) and f)(4)
40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)	See b)(2)g., b)(2)h., c)(7), d)(15), e)(11) and f)(5)
40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)	See b)(2)e., c)(8), d)(16), e)(12) and f)(6)
40 CFR, Part 60, Subpart A (40 CFR 60.1 – 60.19)	See 40 CFR 60.1 through 60.19
40 CFR, Part 63, Subpart A (40 CFR 63.1 – 63.15)	<p>Table 3 of Subpart F of 40 CFR, Part 63 – Applicability of General Provisions to Subpart F shows which parts of the General Provisions in 40 CFR 63.1 – 15 apply.</p> <p>Table 1A of Subpart G of 40 CFR, Part 63 – Applicability of General Provisions to Subpart G shows which parts of the General Provisions in 40 CFR 63.1 – 15 apply.</p> <p>Table 4 of Subpart H of 40 CFR, Part 63 – Applicability of General Provisions to Subpart H shows which parts of the General Provisions in 40 CFR 63.1 – 15 apply.</p>

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
 - i. 63.0 lbs VOC/hr and 276.0 tons VOC/yr
 - ii. 205.4 lbs CO/hr and 900.0 tons CO/yr
 - iii. 25.4 lbs NOx/hr, based upon a rolling, 24-hour average and 111.3 tons NOx/yr

- iv. 5.5 lbs SO₂/hr, based upon a 30-day rolling average and 24.2 tons SO₂/yr
 - v. 6.4 lbs PE/hr and 28.0 tons PE/yr
 - vi. Visible PE shall not exceed 10% opacity as a 6-minute average.
 - vii. The permittee shall not burn in this emissions unit any fuel gas that contains hydrogen sulfide (H₂S) in excess of 162 ppm, as a rolling, 3-hour average. This concentration is equivalent to 230 mg H₂S/dscm.
- b. The requirements of this rule are equivalent to the requirements established pursuant to OAC rule 3745-31-05(D); therefore, the permittee has satisfied the Best Available Technology (BAT) requirements pursuant to ORC 3704.03(T) in this permit.
 - c. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
 - d. The permittee does not currently employ and has never before employed any photochemically reactive material in this emissions unit, as defined in OAC rule 3745-21-01(C)(5). Therefore, this emissions unit is exempt from OAC rule 3745-21-07(G)(2). A process change that would result in using photochemically reactive materials would constitute a modification as defined in OAC rule 3745-31-01, and would require the permittee to obtain a PTI modification.
 - e. 40 CFR, Part 60, Subpart VV regulations overlap with those of 40 CFR, Part 63, Subpart H. 40 CFR 63.160(b) and (c) address this overlap and state that equipment subject to 40 CFR, Part 60, Subpart VV is required to comply only with the provisions of 40 CFR, Part 63, Subpart H.

The requirements of the applicable standards in OAC rule 3745-21-09(DD), are equivalent to or less stringent than the alternative leak detection and repair (LDAR) monitoring plan submitted by the permittee, pursuant to 40 CFR Part 63, Subpart H.

The permittee shall include the appropriate process equipment and regulated components for emissions unit N006 in the current site fugitive leak detection and repair (LDAR) program. The LDAR program shall comply with the appropriate provisions (including operational restrictions, monitoring and record keeping, reporting, and testing) 40 CFR 63 Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks).
 - f. NO_x emissions from the combustion of fuel and waste streams in the SOGB shall not exceed 0.10 lb/mmBtu total heat input.
 - g. This emissions unit is a group 1 process vent as defined in 40 CFR 63.111.
 - h. Pursuant to 40 CFR 63.113(h), the permittee is not required to make a group determination as described in 40 CFR 63.115 because it complies with 40 CFR 63.113(a)(1) or (a)(2).

c) Operational Restrictions

- (1) The permittee shall comply with the following control requirements for this emissions unit:
 - a. The boiler shall achieve a destruction efficiency greater than or equal to 99% for gaseous VOC.
 - b. The boiler shall achieve a reduction efficiency of greater than or equal to 99% for liquid organics.
- (2) The permittee shall only burn liquid organic waste streams that meet the requirements of 40 CFR 261.38, whether or not they are hazardous, in this emissions unit which meet the following requirements for hazardous wastes:
 - a. the liquid organic waste streams have been classified as a hazardous waste solely because it possesses the characteristic of ignitability as described by the test for characteristics of hazardous wastes under Chapter 3745-51 of the Administrative Code, or have been exempted by the Director from hazardous waste incineration requirements in accordance with OAC rule 3745-57-40(C); and
 - b. the liquid organic waste streams are not applicable to 40 CFR, Part 63, Subpart EEE - National Emission Standards for Hazardous Waste Combustors in accordance with the comparable fuels exclusion.
- (3) The permittee shall establish a range of operating parameters for the SOGB that meet the requirements of 40 CFR Part 63 Subpart G. [40 CFR 63.116(c), and 40 CFR 63.114(e)].
- (4) At all times, including periods of startup, shutdown and malfunction as defined by a plan developed in accordance with 63.103(c)(2), the thermal oxidizer shall be operated in accordance with good air pollution practices.
- (5) See 40 CFR, Part 60, Subpart Db (40 CFR 60.40b – 60.49b)
- (6) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
- (7) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
- (8) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)

d) Monitoring and/or Recordkeeping Requirements

- (1) In order to demonstrate compliance with the requirement not to burn any fuel gas that contains an H₂S concentration in excess of 230 mg/dscm (0.1 gr/dscf) (equivalent to 162 ppm) based on a 3-hour, rolling average in this emissions unit, the permittee shall calculate and record the H₂S concentration, in ppm, for each rolling, 3-hour average, based on the data generated from the continuous monitoring system currently required for on the Premcor Refining Group (premise #0302020012) fuel gas system which also serves this emissions unit. The monitoring to show ongoing compliance with the H₂S

limitation will also be adequate to ensure ongoing compliance with the SO₂ emission limitation.

Sulfur monitoring for raw material butane shall be conducted by the appropriate ASTM methods. For butane supplied by Premcor Refining Group, weekly analyses shall be required at a minimum.

- (2) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the SOGB stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - a. the color of the emissions;
 - b. whether the emissions are representative of normal operations;
 - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - d. the total duration of any visible emission incident; and
 - e. any corrective actions taken to eliminate the visible emissions.
- (3) In order to demonstrate compliance with the NO_x emission limitation of 23.0 lbs/hr, based upon a 24-hour rolling average, as established pursuant to OAC rule 3745-31-05 and the NO_x emission limitation of 0.10 lb/mmBtu heat input based on a 30-day, rolling average as required by 40 CFR 60.44b, the permittee shall operate and maintain a continuous emission monitor (CEM) on the outlet stream of the SOGB to continuously monitor and record NO_x from emissions unit N006 in units of the applicable standard. Such continuous monitoring and recording equipment shall comply with the requirements specified in 40 CFR Part 60.13 and shall be installed and operated in accordance with the applicable portions of 40 CFR 60.48b.
- (4) The permittee shall operate the SOGB in order to meet the requirements of 40 CFR 63 Subpart G. The permittee shall operate continuous temperature monitoring and recording devices in the firebox of the thermal oxidizer. This parameter monitoring for temperature compliance with the requirements of 63.114(a)(1) provides parametric monitoring as an indicator of ongoing compliance with the applicable VOC and CO emission limitations.
- (5) The following information shall be recorded for this emissions unit and kept in a readily accessible location:
 - a. detailed schematics, design specifications, and piping and instrumentation diagrams;
 - b. the dates and descriptions of any changes in the design specification;
 - c. description of the parameter and or parameters monitored to ensure that the thermal oxidizer is operated and maintained in conformance with design, and an explanation of the reason for selecting such a parameter or parameters;

- d. periods when the SOGB is not operated as designed; and
 - e. dates of start-ups and shutdowns of the SOGB. [OAC Rule 3745-21-09(DD)(14)(d)].
- (6) The permittee shall maintain records that document the operating times for the SOGB and the monitoring equipment. The information shall be retained for a period of five years.
 - (7) The permittee shall keep the following up-to-date and readily accessible records for a period of 5 years:
 - a. continuous records of SOGB firebox temperature [40 CFR 63.118(a) and 40 CFR 63.152(f)];
 - b. records of all periods when the closed vent stream is diverted from the SOGB [40 CFR 63.118(c)(3)]; and
 - c. records of the daily average SOGB firebox temperature for each operating day [40 CFR 63.118(a) and 40 CFR 63.152(f)].
 - (8) The permittee shall comply with the applicable monitoring and record keeping requirements for emissions unit N006 contained in 40 CFR Part 60 Subpart Db.
 - (9) 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 unless otherwise specified in this permit and/or required by either State or federal applicable regulations in accordance with the general terms and conditions of this permit. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings, if a strip-chart recorder is employed, for continuous monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.
 - (10) The permit to install for this emissions unit (N006) was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutants:

Pollutant: Methanol

TLV ($\mu\text{g}/\text{m}^3$): 262,000

Maximum Hourly Emission Rate (lbs/hr): 0.15

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 174

MAGLC ($\mu\text{g}/\text{m}^3$): 6238

Pollutant: Tetrahydrofuran

TLV ($\mu\text{g}/\text{m}^3$): 590,000

Maximum Hourly Emission Rate (lbs/hr): 5.20

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 358

MAGLC ($\mu\text{g}/\text{m}^3$): 14,048

Pollutant: Ethanol

TLV ($\mu\text{g}/\text{m}^3$): 1,880,000

Maximum Hourly Emission Rate (lbs/hr): 2.2

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 151

MAGLC ($\mu\text{g}/\text{m}^3$): 44,762

Pollutant: Propanol

TLV ($\mu\text{g}/\text{m}^3$): 492,000

Maximum Hourly Emission Rate (lbs/hr): 1.90

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 131

MAGLC ($\mu\text{g}/\text{m}^3$): 11,714

Pollutant: Butanol

TLV ($\mu\text{g}/\text{m}^3$): 152,000

Maximum Hourly Emission Rate (lbs/hr): 4.35

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 299

MAGLC ($\mu\text{g}/\text{m}^3$): 2670

Pollutant: Formic Acid

TLV ($\mu\text{g}/\text{m}^3$): 9400

Maximum Hourly Emission Rate (lbs/hr): 0.02

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 1.38

MAGLC ($\mu\text{g}/\text{m}^3$): 224

Pollutant: Acrylic Acid

TLV ($\mu\text{g}/\text{m}^3$): 5900

Maximum Hourly Emission Rate (lbs/hr): 0.02

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 1.38

MAGLC ($\mu\text{g}/\text{m}^3$): 141

Pollutant: Acetic Acid

TLV ($\mu\text{g}/\text{m}^3$): 25,000

Maximum Hourly Emission Rate (lbs/hr): 0.05

Predicted 1-Hour Maximum Ground-Level Concentration ($\mu\text{g}/\text{m}^3$): 3.44

MAGLC ($\mu\text{g}/\text{m}^3$): 595

- (11) Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:
- a. changes in the composition of the materials used , or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
 - b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
 - c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) is (are) defined as a modification under other provisions of the modification definition, then the permittee shall obtain a final permit to install prior to the change.

- (12) The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"
- a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
 - b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
 - c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.
- (13) See 40 CFR, Part 60, Subpart Db (40 CFR 60.40b – 60.49b)
- (14) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
- (15) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
- (16) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)
- e) Reporting Requirements
- The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the fuel content restriction of 230 mg H₂S/dscm (equivalent to 162 ppm of H₂S). These reports shall be submitted in accordance with the Standard Terms and Conditions of this permit.
- (1) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the SOGB stack serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Director (the appropriate Ohio EPA District Office or local air agency) by January 31 and July 31 of each year and shall cover the previous 6-month period.
 - (2) The permittee shall submit the following semiannual reports:
 - a. exceedances of all monitored parameters;
 - b. a log of the operating time for the thermal oxidizer;

- c. periods of time when the closed vent system is diverted from the thermal oxidizer;
- d. all periods of time when the thermal oxidizer was not operational;
- e. all periods of time when required monitoring data was not collected; and
- f. daily average values of thermal oxidizer firebox temperature for both excused and unexcused excursions when the daily average temperature values were outside the ranges established in the Notification of Compliance or the operating permit. For excursions caused by lack of monitoring data, the duration of periods when monitoring data were not collected shall be specified [40 CFR 63.152(c) and 40 CFR 63.118(f)].

The time periods or deadlines specified in 40 CFR 63.152(c) may be changed by mutual agreement between the permittee and the Ohio EPA in accordance with 40 CFR 63.9 (i).

- (3) The permittee shall comply with the record keeping and reporting requirements outlined in 40 CFR 60.49b. The reporting requirements include the submission of quarterly excess emission reports to the Ohio EPA NWDO in accordance with the General Terms and Conditions of this permit.
- (4) The permittee shall maintain records of all data obtained by the continuous NOx monitoring system including but not limited to parts per million of NOx on a six-minute basis, emissions of NOx in units of the applicable standards in the appropriate averaging period (e.g., 3-hour, rolling average and lb/mmBtu as a 30-day, rolling average), results of daily zero/span calibration checks, and magnitude of manual calibration adjustments.
- (5) Pursuant to OAC rules 3745-15-04, and ORC sections 3704.03(I) and 3704.031 and 40 CFR Parts 60.7 and 60.13(H), the permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, Northwest District Office or local air agency documenting the date, commencement and completion times, duration, magnitude, reason (if known), and corrective actions taken (if any) of all instances of NOx values in excess of any applicable limitations specified in the terms and conditions of this permit, in units of the standards. These reports shall also contain the total NOx emissions for the calendar quarter (in tons.)
- (6) The permittee shall submit reports within 30 days following the end of each calendar quarter to the Ohio EPA, Northwest District Office documenting any continuous NOx monitoring system 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 emissions unit and control equipment functions. The total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report.

If there are no excess emissions during the calendar quarter, the permittee shall submit a statement to that effect along with the emissions unit operating time during the reporting period and the date, time, reason, and corrective action(s) taken for each time period of emissions unit, control equipment, and/or monitoring system malfunctions. The

total operating time of the emissions unit and the total operating time of the analyzer while the emissions unit was on line shall also be included in the quarterly report. These quarterly excess emission 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 quarter in accordance with the general terms and conditions of this permit.

The time periods or deadlines specified in this provision may be changed by mutual agreement between the permittee and the Ohio EPA in accordance with 40 CFR63.19 (f).

- (7) The quality assurance/quality control plans and logbooks dedicated to the continuous NOx monitoring systems, developed in accordance with 40 CFR Part 60 Appendix F, shall be kept on site and available for inspection during regular hours.
 - (8) The permittee will submit start-up, shutdown, and malfunction reports in accordance with 40 CFR 63.10(d)(5); except that reports shall be submitted at the times specified in 40 CFR 63.152(d) of Subpart G and 40 CFR 63.182(d) of Subpart H.
 - (9) See 40 CFR, Part 60, Subpart Db (40 CFR 60.40b – 60.49b)
 - (10) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
 - (11) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
 - (12) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)
- f) Testing Requirements
- (1) Compliance with the emission limitations in Section b)(1) of these terms and conditions shall be determined in accordance with the following methods:
 - a. Emission Limitations: 63.0 lbs VOC/hr, 205.4 lbs CO/hr, 25.4 lbs NOx/hr, 5.5 lbs SO2/hr, based upon a 30-day rolling average, 6.4 lbs PE/hr

Applicable Compliance Method: If required, compliance with the hourly allowable PE limitation shall be based on the results of stack testing conducted in accordance with 40 CFR, Part 60, Appendix A - Test Methods 1 - 5.

If required, compliance with the hourly allowable SO2 emission limitation shall be based on the results of stack testing conducted in accordance with 40 CFR, Part 60, Appendix A – Test Methods 1 - 4 and 6.

Compliance with the hourly SO2 emission limitation, based upon a 30-day rolling average, shall be based upon H2S monitoring for refinery fuel gas and sulfur monitoring for input butane using ASTM test methods. For butane, supplied by Premcor Refining Group, sulfur monitoring shall be performed weekly at a minimum. For butane purchased from other commercial sources, sulfur monitoring shall be performed on a per shipment basis.

If required, compliance with the hourly allowable VOC emission limitation shall be based on the results of stack testing conducted in accordance with 40 CFR, Part 60, Appendix A - Test Methods 1 – 4 and 18, 25, or 25A, as appropriate.



If required, compliance with the hourly allowable NOx emission limitation shall be based on the continuous NOx emissions monitor and the results of stack testing conducted in accordance with 40 CFR, Part 60, Appendix A - Test Methods 1 - 4 and 7.

If required, compliance with the hourly allowable CO emission limitation shall be based on the results of stack testing conducted in accordance with 40 CFR, Part 60, Appendix A - Test Methods 1 – 4 and 10.

- b. Emission Limitations: 276.0 tons VOC/yr, 900.0 tons CO/yr, 111.3 tons NOx/yr, 24.2 tons SO2/yr, 28.0 tons PE/yr

Applicable Compliance Method: The annual emission limitation for each pollutant above was developed by multiplying the hourly emission limitation for each pollutant by 8760, and then dividing by 2000. Therefore, as long as compliance with the hourly allowable emission limitation for each pollutant is maintained, compliance with the annual emission limitation for the pollutant shall be demonstrated.

- c. Emission Limitation: 0.10 lb NOx/mmBtu total heat input

Applicable Compliance Method: Compliance with the NOx standard of 0.10 lb/mmBtu heat input shall be demonstrated through a 30-day rolling average of all the calculated hourly NOx emission rates for the previous 30 operating days based on the results of the continuous emission monitor (CEM). The permittee shall also monitor and record fuel gas and off-gas flow rates to the SOGB. The above information will be applied to the following equation for calculating lbs NOx per mmBtu heat input:

$$\frac{\text{lbs NOx}}{\text{mmBtu heat input}} = \frac{\text{lbs NOx emitted}}{\text{mmBtu heat input}}$$

$$\text{lbs NOx} = \frac{\text{ppmv}}{10^6} * \text{MW}_{\text{corr}} * \text{Stack (lb/hr)} * \text{Moisture}$$

Where:

ppmv = concentration of NOx measured by CEM on SOGI outlet

MW_{corr} = molecular weight correction factor, NOx (46.01

lb/lb-mole) to stack gas (~29.7 lb/lb-mole)

Stack = stack flow, lb/hr

Moisture = moisture correction factor, dry NOx CEM, wet stack flowmeter

$$\text{mmBtu/hr} = [\text{Fuel} * \text{DH}_{\text{cf}} / 10^6] + [\text{Offgas lb} * \text{DH}_{\text{co}} / 10^6]$$

Where:

Fuel = Fuel flow rate (natural gas or refinery fuel gas), average lb/hr

Offgas = Scrubber offgas flow rate, average lbs/hr

DHcf = Heat of combustion for fuel, Btu/lb (for natural gas, 23,000

Btu/lb and refinery fuel gas, 20,482 Btu/lb)

DHco = Heat of combustion for off gas = $\sum_{i=1}^n C_i B_{tui}$

where:

C_i = offgas concentration of component i, in lb/hr

B_{tui} = Btu/lb of component i from published values or measured values of the heats of combustion determined using ASTM D2382-76 or 88 or D4809-95

10^6 = conversion to MM

The permittee shall demonstrate compliance with the 0.10 lb NO_x per mmBtu limit through a 30-day, rolling average of all the calculated hourly NO_x emission rates for the preceding 30 operating days. The monitoring equipment shall be installed and operated in accordance with the applicable portions of 40 CFR 60.48b.

- d. Emission Limitation: Visible PE shall not exceed 10% opacity, as a 6-minute average.

Applicable Compliance Method: If required, the permittee shall demonstrate compliance with this emission limitation pursuant to Method 9 of 40 CFR, Part 60, Appendix A.

- e. Emission Limitation: The permittee shall not burn in this emissions unit any fuel gas that contains H₂S in excess of 162 ppm, as a rolling, 3-hour average. This concentration is equivalent to 230 mg H₂S/dscm.

Applicable Compliance Method: Compliance with the emission limitation above shall be based upon the record keeping requirements as specified in section d)(1) of this permit.

- (2) Performance testing requirements for emissions from emissions unit P801 to the SOGB are detailed in the terms and conditions for emissions unit N006 due to the fact that this incinerator also serves as a control device for emissions unit P801. All operational restrictions, monitoring, record keeping, reporting, and testing requirements for other emissions sources from P801, including but not limited to emissions from the butanediol plant no. 1 flare, are established in emissions unit P801.
- (3) See 40 CFR, Part 60, Subpart Db (40 CFR 60.40b – 60.49b)



- (4) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
- (5) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
- (6) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)
- g) Miscellaneous Requirements
 - (1) None.



2. P801, Flare associated with Butanediol Manufacturing Plant

Operations, Property and/or Equipment Description:

Flare associated with emissions unit P801

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
	OAC rule 3745-31-05(D)	<u>Emissions from this process vented to the flare:</u> 0.04 lb of particulate emissions (PE)/hr and 0.18 tons PE/yr 7.58 lbs of volatile organic compounds (VOC)/hr, and 33.2 tons VOC 4.85 lbs of carbon monoxide (CO)/hr and 21.23 tons CO/yr 0.89 lb of nitrogen oxides (NOx)/hr and 3.90 tons NOx/yr 0.48 lb of sulfur dioxides (SO2)/hr and 2.10 tons SO2/yr No visible emissions from the flare [See c)(3)a.i.] <u>Fugitive Process Emissions:</u> 5.37 tons VOC/yr The emissions from this process that are vented to the scrubber off-gas boiler (SOGB) are accounted for in the emissions allowables for emissions unit N006. See b)(2)a. and c)(1)
	ORC 3704.03(T)	See b)(2)b.



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	OAC rule 3745-31-05(A)(3), as effective 11/30/01	See b)(2)c.
	OAC rule 3745-31-05(A)(3), as effective 12/01/06	See b)(2)d.
	OAC rule 3745-21-07(G)	See b)(2)e.
	OAC rule 3745-21-09(DD)	See b)(2)f.
	OAC rule 3745-21-09(EE)	See b)(2)g.
	40 CFR, Part 60, Subpart VV	See b)(2)f.
	40 CFR, Part 60, Subpart III	See b)(2)h.
	40 CFR, Part 60, Subpart NNN	See b)(2)i.
	40 CFR, Part 60, Subpart RRR	See b)(2)j.
	40 CFR, Part 63, Subpart F	See c)(6), d)(3), e)(3) and f)(2)
	40 CFR, Part 63, Subpart G	See b)(2)k., c)(7), d)(4), e)(4) and f)(3)
	40 CFR, Part 63, Subpart H	See b)(2)f., c)(8), d)(5), e)(5) and f)(4)
	40 CFR, Part 63, Subpart A [40 CFR Part 63.1 – 63.15]	<p>Table 3 of Subpart F of 40 CFR, Part 63 – Applicability of General Provisions to Subpart F shows which parts of the General Provisions in 40 CFR 63.1 – 15 apply.</p> <p>Table 1A of Subpart G of 40 CFR, Part 63 – Applicability of General Provisions to Subpart G shows which parts of the General Provisions in 40 CFR 63.1 – 15 apply.</p> <p>Table 4 of Subpart H of 40 CFR, Part 63 – Applicability of General Provisions to Subpart H shows which parts of the General Provisions in 40 CFR 63.1 – 15 apply.</p>

(2) Additional Terms and Conditions

- a. This permit establishes the following federally enforceable emission limitations for the purpose of limiting potential to emit (PTE) to avoid Prevention of Significant Deterioration (PSD) requirements. The federally enforceable emission limitations are based on the operational restrictions contained in c)(1):
 - i. Emissions from this process vented to the flare:
 - (a) 0.04 lb PE/hr and 0.18 tons PE/yr
 - (b) 7.58 lbs VOC/hr, and 33.2 tons VOC
 - (c) 4.85 lbs CO/hr and 21.23 tons CO/yr

- (d) 0.89 lb NO_x/hr and 3.90 tons NO_x/yr
- (e) 0.48 lb SO₂/hr and 2.10 tons SO₂/yr
- (f) No visible emissions from the flare
- ii. Fugitive Process Emissions:
 - (a) 5.37 tons VOC/yr
- iii. The emissions from this process that are vented to the scrubber off-gas boiler (SOGB) are accounted for in the emissions allowables for emissions unit N006.
- b. The requirements of this rule are equivalent to the requirements established pursuant to OAC rule 3745-31-05(D); therefore, the permittee has satisfied the Best Available Technology (BAT) requirements pursuant to ORC 3704.03(T) in this permit.
- c. The requirements of this rule are equivalent to the requirements established pursuant to OAC rule 3745-31-05(D); therefore, the permittee has satisfied the Best Available Technology (BAT) requirements pursuant to OAC rule 3745-31-05(A)(3), as effective November 30, 2001, in this permit.

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

It should be noted that the emission limitations and control requirements established pursuant to OAC rule 3745-31-05(D) will remain applicable after the above SIP revisions are approved by U.S. EPA.

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

Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3)(a), as effective December 1, 2006, do not apply to the PE, NO_x and SO₂ emissions from this air contaminant source since the controlled potential to emit (PTE) is less than 10 tons per year taking into consideration federally enforceable requirements established under OAC rule 3745-31-05(D).

- e. The permittee does not currently employ and has never before employed any photochemically reactive material, as defined in OAC rule 3745-21-01(C)(5) in this emissions unit. Therefore, this emissions unit is exempt from OAC rule 3745-21-07(G)(2). A process change that would result in using photochemically reactive materials would constitute a modification as defined in OAC rule 3745-31-01, and would require the permittee to obtain a PTI modification.
- f. 40 CFR, Part 60, Subpart VV regulations overlap with those of 40 CFR, Part 63, Subpart H. 40 CFR 63.160(b) and (c) address this overlap and state that equipment subject to 40 CFR, Part 60, Subpart VV is required to comply only with the provisions of 40 CFR, Part 63, Subpart H.

The requirements of the applicable standards in OAC rule 3745-21-09(DD) are equivalent to or less stringent than the alternative leak detection and repair (LDAR) monitoring plan submitted by the permittee, pursuant to 40 CFR Part 63, Subpart H.

The permittee shall include the appropriate process equipment and regulated components for emissions unit P801 in the current site fugitive leak detection and repair (LDAR) program. The LDAR program shall comply with the appropriate provisions (including operational restrictions, monitoring and record keeping, reporting, and testing) of 40 CFR 63 Subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks).

- g. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(D).
- h. 40 CFR, Part 60, Subpart III regulations overlap with those of 40 CFR, Part 63, Subpart G. 40 CFR 63.110(d) addresses this overlap and states that equipment subject to 40 CFR, Part 60, Subpart III is required to comply only with the provisions of 40 CFR, Part 63, Subpart G.
- i. 40 CFR, Part 60, Subpart NNN regulations overlap with those of 40 CFR, Part 63, Subpart G. 40 CFR 63.110(d) addresses this overlap and states that equipment subject to 40 CFR, Part 60, Subpart NNN is required to comply only with the provisions of 40 CFR, Part 63, Subpart G.
- j. 40 CFR, Part 60, Subpart RRR regulations overlap with those of 40 CFR, Part 63, Subpart G. 40 CFR 63.110(d) addresses this overlap and states that equipment subject to 40 CFR, Part 60, Subpart RRR is required to comply only with the provisions of 40 CFR, Part 63, Subpart G.
- k. Pursuant to 40 CFR 63.113(h), the permittee is not required to make a group determination as described in 40 CFR 63.115 because it complies with 40 CFR 63.113(a)(1) or (a)(2).
- l. This emissions unit is vented to a thermal oxidizer that also controls the emissions from emissions unit N006. All operational restrictions, monitoring, record keeping, reporting and testing requirements for the thermal oxidizer are established in the terms and conditions for emissions unit N006. Therefore, no

additional monitoring, record keeping, reporting and testing requirements are necessary for this emissions unit.

c) Operational Restrictions

- (1) The following operational restrictions have been included in this permit for the purpose of establishing federally enforceable requirements which limit the PTE for VOC emissions [See b)(2)a.]:
 - a. Emissions from this emissions unit shall be vented to a closed process vent. The closed process vent system shall meet the following control requirements:
 - i. maleic acid scrubber vent emissions shall be reduced by 99% utilizing a thermal oxidizer; and
 - ii. all process vent emissions not routed to a thermal oxidizer shall be combusted in a flare.
- (2) The closed vent system shall be operated at all times when emissions may be vented to it.
- (3) The permittee shall comply with the following operational requirements of 40 CFR 63 Subparts A, F, G and H:
 - a. Flare operational restrictions [40 CFR 63.11(a)(4)]:
 - i. The flare shall be designed for and operated with no visible emissions as determined by "Method 22, 40 CFR, Part 60, Appendix A," except for periods not to exceed a total of five minutes during any 120 consecutive minutes.
 - ii. The flare shall be operated with either an electric arc ignition system or a pilot flame. If a pilot flame is employed, the flame shall be present at all times. If an electric arc ignition system is employed, the arcing shall pulse continually.
 - iii. The flare shall be steam-assisted.
 - iv. The net heating value of the gas being controlled in the flare shall meet the requirements of 40 CFR 63.11, as determined by the specified analytical methods.
 - v. The flare shall be designed and operated to meet the requirements for actual exit velocity, as determined by the method specified in 40CFR 63.11.
 - vi. The permittee shall ensure the flare is operated and maintained in conformance with its design.
 - vii. The flare shall be operated at all times when emissions may be vented to it.

- (4) At all times including periods of startup, shutdown, and malfunction as defined by a plan developed in accordance with 63.6(e)(3), emissions unit P801 shall be operated in accordance with good air pollution control practices.
 - (5) The permittee shall comply with the heat exchanger system requirements by one of the methods specified in 63.104(b) or (c) unless one or more of the exemptions contained in 63.104(a)(1) through (6) are met.
 - (6) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
 - (7) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
 - (8) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall comply with the following monitoring requirements:
 - a. The permittee shall comply with the monitoring requirements contained in 40 CFR 63, Subparts A, F, G and H.
 - b. Flare monitoring requirements:
 - i. The flare shall be monitored with a thermocouple or any other equivalent device to detect the presence of a pilot flame. If an electric arc ignition system is employed, the arcing shall be monitored to detect any failure. [40 CFR 63.114(a)(2)].
 - ii. The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stacks serving this emissions unit including the flare. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
 - (a) the location and color of the emissions;
 - (b) whether the emissions are representative of normal operations;
 - (c) if the emissions are not representative of normal operations, the cause of the abnormal emissions;
 - (d) the total duration of any visible emission incident; and
 - (e) any corrective actions taken to eliminate the visible emissions.
- If, during any weekly check, the permittee observes visible emissions from the flare, the permittee shall monitor the visible emissions for a minimum period of 10 minutes in accordance with the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 22 and record the results in an operations log.

- c. LDAR monitoring requirements:
 - i. The permittee shall comply with the LDAR program monitoring requirements in accordance with 40 CFR 63.180. Monitoring shall comply with Method 21 of 40 CFR Part 60, appendix A.
- (2) The permittee shall comply with the following record keeping requirements:
 - a. The permittee shall comply with the record keeping requirements contained in and 40 CFR, Part 63, Subparts A, F, G and H.
 - b. The permittee shall maintain records of whether or not the flow indicator specified in 40 CFR Part 63.114(d)(1) was operating and whether or not a diversion was detected [40 CFR 63.118(a)(3)].
 - c. The following information shall be recorded for the flare and kept in a readily accessible location:
 - i. detailed schematics, design specifications, and piping and instrumentation diagrams;
 - ii. the dates and descriptions of any changes in the design specification;
 - iii. a description of the parameter or parameters monitored to ensure that the flare is operated and maintained in conformance with its design, and an explanation of the reason for selecting such parameter or parameters;
 - iv. periods when the closed vent system and the flare are not operated as designed; and,
 - v. dates of start-ups and shutdowns of the closed vent system and flare.
 - d. The permittee shall maintain records that document operating time for the closed vent system, flare and monitoring equipment. The information shall be maintained in the company's files for a period of five years.
 - e. Flare record keeping requirements:
 - i. The permittee shall maintain records of all hourly periods when the flare pilot flame is absent [40 CFR 60.118(a)(1)].
 - f. The permittee shall comply with all LDAR program record keeping requirements in accordance with 40 CFR 63.181. All records and information required shall be maintained in a manner that can be readily accessed at the plant site.
 - g. 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 unless otherwise specified in this permit and/or required by either state or federal applicable regulations. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings, if a strip-chart recorder is employed, for continuous

monitoring instrumentation, and copies of all reports required by the permit. Such records may be maintained in computerized form.

- (3) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
 - (4) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
 - (5) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)
- e) Reporting Requirements
- (1) The permittee shall comply with the following reporting requirements:
 - a. all reporting shall comply with the requirements contained in and 40 CFR, Part 63, Subparts A, F, G and H; and
 - b. the permittee shall submit the following reports for criteria pollutants:
 - i. exceedances of all monitored parameters;
 - ii. a log of the operating time for the closed vent system and flare;
 - iii. all periods of time when the flare was not operational; and
 - iv. all periods of time when required monitoring data was not collected.
 - c. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stacks, including the flare, serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Ohio EPA Southeast District Office by January 31 and July 31 of each year and shall cover the previous 6-month period.
 - d. The permittee shall submit quarterly reports which include all visible emission readings conducted pursuant to the methods and procedures specified in 40 CFR Part 60, Appendix A, Method 22 as a result of the presence of visible emissions from the flare. These quarterly reports shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall address the data obtained during the previous calendar quarter.
 - (2) The permittee shall comply with the LDAR program reporting requirements in accordance with 40 CFR 63.182. The time periods or deadlines specified in 40 CFR 63.182 may be changed by mutual agreement between the permittee and the Ohio EPA in accordance with 40 CFR 63.9(i).
 - (3) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
 - (4) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
 - (5) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)

f) Testing Requirements

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

- a. Emission Limitations: Flare emissions - 0.04 lb PE/hr, 7.58 lbs VOC/hr, 4.85 lbs CO/hr, 0.89 lb NO_x/hr, 0.48 lb SO₂/hr

Applicable Compliance Method: Compliance shall be demonstrated by ensuring the flare operates at the proper efficiency through the monitoring and record keeping specified in sections d)(1)a. and d)(2)e.

The flare VOC emission limitation was developed by applying a 98% reduction efficiency for control with a flare to calculated engineering estimates of flare vent streams. The other flare emission limitations account for combustion emissions from the natural gas pilot flame. Pilot flame emissions were established by multiplying the emission factors for NO_x, PE, CO and SO₂ of 0.068 lb NO_x/mmBtu, 0.003 lb PE/mmBtu, 0.37 lb CO/mmBtu and 0.0006 lb SO₂/mmBtu by the maximum hourly heat input capacity (13mmBtu/hr) of the pilot flame.

- b. Emission Limitations: 0.18 ton PE/yr, 33.2 tons VOC/yr, 21.23 tons CO/yr, 3.90 tons NO_x/yr, 2.10 tons SO₂/yr

Applicable Compliance Method: The annual emission limitation for each pollutant above was developed by multiplying the hourly emission limitation for each pollutant by 8760, and then dividing by 2000. Therefore, as long as compliance with the hourly allowable emission limitation for each pollutant is maintained, compliance with the annual emission limitation for the pollutant shall be demonstrated.

- c. Emission Limitation: No visible flare emissions

Applicable Compliance Method: The test method employed to demonstrate compliance with the emission limitation shall be Method 22, which is located in 40 CFR Part 60, Appendix A.

- d. Emission Limitation: Fugitive Process Emissions - 5.37 tons VOC/yr

Applicable Compliance Method: The process fugitive emission limitation was developed in accordance with the following equation:

$$PFE = [\text{summation of } NiSi \times (\text{hrs/yr}) \times (\text{ton}/2000 \text{ lbs})] \text{ for } i=1 \text{ to } n$$

where:

PFE = process fugitive VOC emissions, tons/yr

Ni = number of pipe fitting components

Si = SOCM emission factor for pipe fitting component i (EPA-450/3-010, April 1982) for pipe fitting component i and/or site specific emission factors derived in accordance with USEPA approved protocols. Compliance shall be demonstrated

by calculations of annual emissions using the above equation and the actual annual hours of operation.

- (2) See 40 CFR, Part 63, Subpart F (40 CFR 63.100 – 63.107)
 - (3) See 40 CFR, Part 63, Subpart G (40 CFR 63.110 – 63.153)
 - (4) See 40 CFR, Part 63, Subpart H (40 CFR 63.160 – 63.183)
- g) Miscellaneous Requirements
- (1) None.