State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL** **CERTIFIED MAIL**
**HAMILTON COUNTY**

Street Address:
122 S. Front Street
Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329
Mailing Address:
Lazarus Gov. Center
P.O. Box 1049

**Application No: 14-05645**
**Fac ID:** 1431140861
**DATE: 1/11/2005**

Ford Motor Co - Sharonville
William Pietrzyk
3000 Sharon Rd
Cincinnati, OH 45241-1924

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging 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 Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 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. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

cc: **USEPA** **HCDES**

OhioEPA

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

| | |
|---|---|
| **Permit To Install** | **Issue Date: 1/11/2005** |
| **Terms and Conditions** | **Effective Date: 1/11/2005** |

## FINAL PERMIT TO INSTALL 14-05645

| | |
|---|---|
| Application Number: | 14-05645 |
| Facility ID: | 1431140861 |
| Permit Fee: | **$1400** |
| Name of Facility: | Ford Motor Co - Sharonville |
| Person to Contact: | William Pietrzyk |
| Address: | 3000 Sharon Rd<br>Cincinnati, OH 45241-1924 |

Location of proposed air contaminant source(s) [emissions unit(s)]:
**3000 Sharon Rd**
**Cincinnati**, **Ohio**

Description of proposed emissions unit(s):
**Installation of 7 carburization furnaces with each furnace having a natural gas-fired thermal oxidizer for emission control.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described 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

Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. State and Federally Enforceable Permit To Install General Terms and Conditions

#### 1. Monitoring and Related Recordkeeping 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:

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

ii. The date(s) analyses were performed.

iii. The company or entity that performed the analyses.

iv. The analytical techniques or methods used.

v. The results of such analyses.

vi. 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:

i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

ii. 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 appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous

calendar quarters. See B.9 below if no deviations occurred during the quarter.

iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., 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.

iv. 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.

**2. 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 appropriate Ohio EPA District Office or local air agency 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).

**3. 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.

**4. 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.

**5. Severability Clause**

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

declared invalid.

**6. 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 reissuance, or modification, or for denial of a permit renewal application.

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

c. This permit may be modified, reopened, 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, reopening or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

**7. 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 this Permit To Install.

**8. Federal and State Enforceability**

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

**9. Compliance Requirements**

a. 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:

i. 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.

ii. 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.

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

iv. 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 appropriate Ohio EPA District Office or local air agency 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:

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

ii. 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.

**10. Permit To Operate Application**

a. If 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).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

**11. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

**12. 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.

## B. State Only Enforceable Permit To Install General Terms and Conditions

### 1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

### 2. 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 appropriate Ohio EPA District Office or local air agency.

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 appropriate Ohio EPA District Office or local air agency. 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., 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.)

### 3. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

### 4. Termination of Permit To Install

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete

within a reasonable time a continuing program of installation or modification. 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.

**5. Construction of New Sources(s)**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. 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 the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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.

**6. 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.

**7. 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).

**8. Construction Compliance Certification**

If applicable, the applicant shall provide Ohio EPA with a written certification (see enclosed form if applicable) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**9. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

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., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

## C. Permit To Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

| Pollutant | Tons Per Year |
|---|---|
| NOx | 2.52 |
| CO | 0.42 |
| VOC | 12.53 |

## Part II - FACILITY SPECIFIC TERMS AND CONDITIONS

### A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions

None

### B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P176 - 6R Carburization Furnace 01 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a

thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's

recommendations, with any modifications deemed necessary by the permittee.

The permittee shall collect and record the following information for each day:

a. All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

Emissions Unit ID: P176

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx
      0.36 TPY NOx

      Applicable Compliance Method for NOx emissions due to carburizing furnace:

      The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

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 3 months after startup of this emissions unit.

b. The emission testing shall be conducted to demonstrate compliance with the overall control efficiency limitation for VOC and the VOC emission limitation.

c. The test method(s) which must be employed to demonstrate compliance with the overall control efficiency limitations for VOC and the VOC emission limitation are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Hamilton County Department of Environmental Services.

Method 25, 40 CFR Part 60, Appendix A

d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the Hamilton County Department of Environmental Services.

Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Hamilton County Department of Environmental Services. 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 Hamilton County Department of Environmental Services refusal to accept the results of the emission test(s).

Personnel from the Hamilton County Department of Environmental Services 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.

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 Hamilton County Department of Environmental Services 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 Hamilton County Department of Environmental Services.

3. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P176 - 6R Carburization Furnace 01 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

Emissions Unit ID: P176

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P177 - 6F Carburization Furnace 02 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information for each day:

   a. All 3-hour blocks of time during which the average combustion temperature within the

thermal oxidizer, when the emissions unit was in operation was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx

0.36 TPY NOx

Applicable Compliance Method for NOx emissions due to carburizing furnace:

The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

2. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P177 - 6F Carburization Furnace 02 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

Emissions Unit ID: P177

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P178 - 6F Carburization Furnace 03 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a

thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information for each day:

   a. All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation was more than 50 degrees

Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx

0.36 TPY NOx

Applicable Compliance Method for NOx emissions due to carburizing furnace:

The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

2. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P178 - 6F Carburization Furnace 03 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P179 - 6F Carburization Furnace 04 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information for each day:

   a. All 3-hour blocks of time during which the average combustion temperature within the

thermal oxidizer, when the emissions unit was in operation was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx

0.36 TPY NOx

Applicable Compliance Method for NOx emissions due to carburizing furnace:

The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

2. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P179 - 6F Carburization Furnace 04 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

Emissions Unit ID: P179

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P180 - 6F Carburization Furnace 05 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information for each day:

   a. All 3-hour blocks of time during which the average combustion temperature within the

thermal oxidizer, when the emissions unit was in operation was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx

0.36 TPY NOx

Applicable Compliance Method for NOx emissions due to carburizing furnace:

The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

2. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P180 - 6F Carburization Furnace 05 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P181 - 6F Carburization Furnace 06 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information for each day:

   a. All 3-hour blocks of time during which the average combustion temperature within the

thermal oxidizer, when the emissions unit was in operation was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx

0.36 TPY NOx

Applicable Compliance Method for NOx emissions due to carburizing furnace:

The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

2. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P181 - 6F Carburization Furnace 06 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

Emissions Unit ID: P181

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None

## Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

### A. State and Federally Enforceable Section

### I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P182 - 6F Carburization Furnace 07 with thermal oxidizer | OAC rule 3745-31-05(A)(3) | Emissions limitations below are from the carburization furnace and thermal oxidizer combined:<br><br>Nitrogen Oxides (NOx) emissions shall not exceed 0.082 lb/hr and 0.36 TPY.<br><br>Carbon Monoxide (CO) emissions shall not exceed 0.014 lb/hr and 0.06 TPY.<br><br>Volatile Organic Compound (VOC) emissions shall not exceed 0.41 lb/hr and 1.79 TPY.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-21-08(B) and 3745-23-06(B). |
| | OAC rule 3745-21-08(B) | See term and condition A.I.2.d |
| | OAC rule 3745-23-06(B) | See term and condition A.I.2.e |

**2. Additional Terms and Conditions**

**2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by the use of a thermal oxidizer to control the VOC emissions and the mass emission limitations.

**2.b** The hourly emissions limitations outlined in term and condition A.1 are based upon the emissions unit's Potential to Emit (PTE). Therefore, no hourly records are required to demonstrate compliance with these limits.

**2.c** The permittee shall maintain a control device (thermal oxidizer) capable of achieving an overall control efficiency of at least 96% for VOC emissions.

**2.d** The permittee has satisfied the "best available control techniques and operating practices" required pursuant to OAC rule 3745-21-08 by committing to comply with the best available technology requirements established in Permit to Install 14-05645.

On November 5, 2002, OAC rule 3745-21-08 was revised to delete paragraph (B); therefore, paragraph (B) is no longer part of the State regulations. However, that rule revision has not yet been submitted to 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 3745-21-08, the requirement to satisfy the "best available control techniques and operating practices" still exists as part of the federally-approved SIP for Ohio.

**2.e** The permittee shall satisfy the "latest available control techniques and operating practices" required pursuant to OAC rule 3745-23-06(B) by complying with the best available technology requirements established pursuant to OAC rule 3745-31-05(A)(3) in this permit to install.

## II. Operational Restrictions

1. The average combustion temperature within the thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

## III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal oxidizer when the emissions is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer’s recommendations, with any modifications deemed necessary by the permittee.

   The permittee shall collect and record the following information for each day:

   a. All 3-hour blocks of time during which the average combustion temperature within the

thermal oxidizer, when the emissions unit was in operation was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance with the 96% overall VOC destruction efficiency requirement; and,

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

## IV. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer does not comply with the temperature limitation specified in term and condition A.II.1. If no exceedances occurred during the reporting period then a report is required stating so.

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

## V. Testing Requirements

1. Compliance with the emission limitations specified in this permit shall be determined in accordance with the following methods:

   a. Emission Limitation:

      0.41 lb/hr VOC
      1.79 TPY VOC

      Applicable Compliance Method for emissions due to carburizing furnace:

      The hourly emissions shall be determined by multiplying the uncontrolled hourly VOC emissions by the control efficiency of the thermal oxidizer.

      Applicable Compliance Method for emissions due to gas-fired thermal oxidizer:

      The hourly emissions shall be determined by multiplying the emission factor, 5.5 lbs/MMscf by the scf/hr. The emissions factors were provided in USEPA AP-42, Fifth Edition, Section 1.4 Natural Gas Combustion, Table 1.4-2 (revised 7/1998).

      The 1.79 TPY VOC emission limitation was developed by adding the lbs VOC/hr from the carburizing furnace and the lbs VOC/hr from the gas-fired oxidizer and multiplying the total lbs VOC/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

   b. Emission Limitation:

      0.082 lb/hr NOx

0.36 TPY NOx

Applicable Compliance Method for NOx emissions due to carburizing furnace:

The emission limitation of 0.066 lb NOx/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for NOx emissions due to gas-fired oxidizer:

The emission limitation of 0.016 lb NOx/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.36 TPY NOx emission limitation was developed by adding the lbs NOx/hr from the carburizing furnace and the lbs NOx/hr from the gas-fired oxidizer and multiplying the total lbs NOx/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

c. Emission Limitation:

0.014 lb/hr CO
0.06 TPY CO

Applicable Compliance Method for CO emissions due to carburizing furnace:

The emission limitation of 0.011 lb CO/hr is based on stack test information submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

Applicable Compliance Method for CO emissions due to gas-fired oxidizer:

The emission limitation of 0.003 lb CO/hr is based on Eclipse Combustion Emission Data Request letter dated 10/26/04 submitted by the permittee in the PTI 14-05645 submitted November 3, 2004.

The 0.06 TPY CO emission limitation was developed by adding the lbs CO/hr from the carburizing furnace and the lbs CO/hr from the gas-fired oxidizer and multiplying the total lbs CO/hr by the maximum operating schedule of 8760 hrs/yr and dividing by 2000 lbs/ton. Therefore, provided compliance is shown with the hourly limitation, compliance will also be shown with the annual limitation.

2. Compliance with the operational restriction in term and condition A.II.1 shall be determined by the record keeping requirements specified in term and condition A.III.1.

## VI. Miscellaneous Requirements

None

## B. State Only Enforceable Section

## I. Applicable Emissions Limitations and/or Control Requirements

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

| Operations, Property, and/or Equipment | Applicable Rules/Requirements | Applicable Emissions Limitations/Control Measures |
|---|---|---|
| P182 - 6F Carburization Furnace 07 with thermal oxidizer | None | None |

**2. Additional Terms and Conditions**

**2.a** None

## II. Operational Restrictions

None

## III. Monitoring and/or Recordkeeping Requirements

1. The permit to install for emissions units P176 through P182 was evaluated based on the actual materials and the design parameters of the emissions units' 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 the emissions units 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 Ground-Level Concentration (MAGLC).

   The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Ethylene

TLV (ug/m3): 229,000

Maximum Hourly Emission Rate (lbs/hr): 1.078 (all emissions units combined)

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 18.1

MAGLC (ug/m3): 5452

Physical changes to or in the method of operation of the emissions units after installation or modification could affect the parameters used to determine whether or not the "Air Toxics 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 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.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will 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 it’s evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. when the 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.

## IV. Reporting Requirements

None

## V. Testing Requirements

None

## VI. Miscellaneous Requirements

None