

**Synthetic Minor and PSD Determination Revision  
Permit To Install 06-06770 (modification)**

**A. Source Description**

Degussa Engineered Carbons, LP operates a facility which produces carbon black in Belpre, Ohio. The Degussa, Belpre facility operates four carbon black units, two dryers and other equipment which handle, store and load the finished product. Emission units P001, P002, P011, and P012 are units that utilize an oil feedstock which is thermally decomposed (cracked) to obtain the end product of carbon black. In addition, emission units P005 and P006 are dryers which drive off the water which is used to stop the cracking reaction.

**B. Facility Emissions and Attainment Status**

This original PSD action was issued in 1997 under PTI number 06-04927. Under section 107 of the Clean Air Act, at source permitting the facility location in Belpre, Ohio (Washington County) and surrounding counties have been classified as attainment by USEPA for all criteria pollutants. The facility is considered to be a major stationary source for PSD purposes.

**C. Source Emissions**

Prior modifications to the permit have been issued on August 21, 2003 (to revise the sulfur content of the feedstock from 2 to 3 percent) and on May 27, 2004 (to revise emissions factors), under this current permit number 06-06770. This permit action seeks to revise the feedstock sulfur content limit to 4.0 percent (a BACT revision). The mass emission limits for SO<sub>2</sub> will not change nor will the limits to any other pollutants.

The following table shows the allowable emissions for this permit:

| POLLUTANT           | EMISSIONS ALLOWED BY THIS PERMIT (TPY) |
|---------------------|--|
| SO <sub>2</sub>     | 4547.0                                 |
| NOX                 | 508.0                                  |
| VOC                 | 151.0                                  |
| CO                  | 2556.0                                 |
| PM/PM <sub>10</sub> | 84.9                                   |
| H <sub>2</sub> S    | 17.3                                   |
| COS                 | 3.4                                    |
| CS <sub>2</sub>     | 7.8                                    |
| HCN                 | 4.2                                    |

In order to demonstrate compliance with this tighter mass emissions limit for SO<sub>2</sub>, the applicant has committed to perform testing of all material put into the carbon black along with daily calculations to demonstrate ongoing compliance.

**Summary of the BACT re-evaluation for SO<sub>2</sub> (also see PTI application)**

Sulfur compound emissions are a product of the sulfur content of the feedstock oil, the feed rate and retention in the final product. The BACT determinations made during previous PSD permitting actions as documented in the RBLC have predominantly focused on limiting the amount of sulfur in the feedstock oil (percent sulfur content by weight, depending on market availability).

In this BACT review the following technologies were considered:

- 1.) Sulfur control in the feedstock;
  - 2.) Absorption/adsorption (post-combustion); and
  - 3.) Sulfur recovery/conversion technologies (post-combustion).
- 
- 1.) The percent sulfur content in the feedstock was the BACT control selected in the first permit action. The original sulfur level was based upon the lowest precedented content available in a feedstock oil. This limit has been determined as technically infeasible since the original permit was issued, because of the limited supply available. The applicant is requesting a limit of 4.0% sulfur content in the feedstock oil. This is an acceptable BACT level based upon review of the RBLC data showing the sulfur percent levels assigned for PSD permits, including a recent, December 2004, determination for Degussa in Louisiana.
  - 2.) No regenerable sorbent technology was considered feasible for carbon black tail-gas (either before or after combustion), so absorption/adsorption was not considered feasible. The applicant considered Selective Adsorption Associates, Inc., Turbosonic Removal, FLEXSORB SE system, CANSOLV system, THIOPAQ Bioscrubber, and Babcock E-LIDS as infeasible due to the respective vendors declining to participate in the analysis. Halides, present in the tail-gas stream produced at Degussa, are known catalyst deactivators for the use of SCOSOx with Carbon Black production. The Dynawave System was considered to be technically feasible; however, it was not considered cost effective at 6.5 million dollars of capital and 4.4 million of annual operating cost. The applicant claimed that the wastewater stream generated by the Dynawave technology would not be practical to treat at a carbon black facility.
  - 3.) Of the sulfur recovery/conversion technologies neither were considered feasible and were eliminated from consideration due to technical infeasibility or cost ineffectiveness. A Modified Claus was considered technically infeasible because the technology was not proven work on the reduced sulfur species in carbon black tail-gas. SNOX was determined to be technically feasible; however, it would not be cost effective at 36.9 million to install it and 11.9 million as an annual operating cost.

Since the 4.0% limit is BACT in other permits and Degussa will maintain the same annual limits established earlier as part of BACT, Ohio EPA believes that the determination constitutes BACT, as there will be no additional pollution generated by the increase on a average hourly or a annual basis. Degussa has submitted a plan to demonstrate compliance with the restricted sulfur dioxide limit. That plan includes the mentioned raw material testing and daily calculations. The requirements of this plan are reflected in the permit administrative modification.

#### **D. Conclusion**

Based upon the analysis of the permit to install application and its supporting documentation provided by Degussa, the Ohio EPA staff has determined that the increase from 3% sulfur to 4.0% sulfur in the oil used to produce carbon black will comply with all applicable State and Federal regulations and that the requirements for BACT are satisfied. Therefore, Ohio EPA staff recommends that a permit to install be issued for the increase in the sulfur content of the oil for the Degussa, Belpre facility.



State of Ohio Environmental Protection Agency

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:  
Lazarus Gov.  
Center

**RE: DRAFT PERMIT TO INSTALL MODIFICATION  
WASHINGTON COUNTY  
Application No: 06-06770  
Fac ID: 0684010049**

**CERTIFIED MAIL**

**DATE: 9/25/2007**

Degussa Engineered Carbons LP  
Donald Loubiere  
P. O. Box 369  
Belpre, OH 45714

You are hereby notified that the Ohio Environmental Protection Agency has made a draft action recommending that the Director issue a Permit to Install modification for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit modification. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the proposed installation. A public notice concerning the draft permit will appear in the Ohio EPA Weekly Review and the newspaper in the county where the facility will be located. Public comments will be accepted by the field office within 30 days of the date of publication in the newspaper. Any comments you have on the draft permit modification should be directed to the appropriate field office within the comment period. A copy of your comments should also be mailed to Robert Hodanbosi, Division of Air Pollution Control, Ohio EPA, P.O. Box 1049, Columbus, OH, 43266-0149.

A Permit to Install modification may be issued in proposed or final form based on the draft action, any written public comments received within 30 days of the public notice, or record of a public meeting if one is held. You will be notified in writing of a scheduled public meeting. Upon issuance of a final Permit to Install modification a fee of **\$ 2375** will be due. Please do not submit any payment now.

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. If you have any questions about this draft permit, please contact the field office where you submitted your application, or Mike Ahern, Permit Issuance and Data Management Section at (614) 644-3631.

Sincerely,

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

CC: USEPA

SEDO

WV

PA

**WASHINGTON COUNTY**

**PUBLIC NOTICE**  
**ISSUANCE OF DRAFT PERMIT TO INSTALL 06-06770 FOR AN AIR CONTAMINANT SOURCE**  
**SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW**  
**FOR DEGUSSA ENGINEERED CARBONS, LP**

On **September 25**, 2007, the Director of the Ohio Environmental Protection Agency issued a draft action of a Permit To Install an air contaminant source for **Degussa Engineered Carbons, LP**, located at **11135 Route 7 North of Belpre, PO Box 369, Belpre**, Ohio.

This draft permit proposes to modify a Prevention of Significant Deterioration permit action originally issued in 1997, last modified on May 27, 2004. This modification allows an increase in the sulfur content level in the carbon black units, with no increase in emissions rates. The allowable levels of criteria pollutants, in tons per year, are as follows:

|                 |        |
|-----------------|--------|
| SO <sub>2</sub> | 4547.0 |
| VOC             | 151.0  |
| CO              | 2556.0 |
| NO <sub>x</sub> | 508.0  |
| PM/PM10         | 84.9   |

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This facility is subject to the applicable provisions of the Prevention of Significant Deterioration (PSD) regulations as promulgated by U.S. EPA (40 CFR 52.21) and the Ohio EPA permit to install requirements (OAC 3745-31).

Comments concerning this draft action, or a request for a public meeting, must be sent in writing to the address identified below no later than thirty (30) days from the date this notice is published. All inquiries concerning this draft action may be directed to the contact identified below.

Bruce Weinberg, Ohio Environmental Protection Agency, Southeast District Office, 2195 Front Street, Logan, OH 43138 [740-385-8501].



**Permit To Install  
Terms and Conditions**

**Issue Date: To be entered upon final issuance  
Effective Date: To be entered upon final issuance**

**DRAFT MODIFICATION OF PERMIT TO INSTALL 06-06770**

Application Number: 06-06770  
Facility ID: 0684010049  
Permit Fee: **To be entered upon final issuance**  
Name of Facility: Degussa Engineered Carbons LP  
Person to Contact: Donald Loubiere  
Address: P. O. Box 369  
Belpre, OH 45714

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**Rte 7 N, 1 mile N of Belpre  
Belpre, Ohio**

Description of proposed emissions unit(s):  
**Administrative Modification to increase sulfur content of feedstock oil form 3 percent to 4 percent.**

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification 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 source(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 included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

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Chris Korleski  
Director

Degussa Engineered Carbons LP

Facility ID: 0684010049

PTI Application: 06-06770

Issued: To be entered upon final issuance

## 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,

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shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See 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 (i.e., postmarked) to the appropriate Ohio EPA District Office or local air agency every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
  - iv. If this permit is for an emissions unit located at a Title V facility, then each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d. The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## **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.

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

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the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

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**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 any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

**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 its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. 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.

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- 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 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**

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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.

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### **13. Permit-To-Install**

A permit-to-install must be obtained pursuant to OAC Chapter 3745-31 prior to "installation" of "any air contaminant source" as defined in OAC rule 3745-31-01, or "modification", as defined in OAC rule 3745-31-01, of any emissions unit included in this permit.

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

### **1. Compliance Requirements**

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

### **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 (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

### **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

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in writing of any transfer of this permit.

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**4. Authorization To Install or Modify**

If applicable, authorization to install or modify any new or existing emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or 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)**

This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

**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**

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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.

Deg

PTI

Emissions Unit ID: P001

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**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., postmarked), 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

| <u>Pollutant</u> | <u>Tons Per Year</u> |
|------------------|----------------------|
| SO <sub>2</sub>  | 4547.0               |
| VOC              | 151.0                |
| CO               | 2556.0               |
| NOx              | 508.0                |
| PM/PM10 (total)  | 84.9                 |
| H <sub>2</sub> S | 17.3                 |
| COS              | 3.4                  |
| CS <sub>2</sub>  | 7.8                  |
| HCN              | 4.2                  |

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**Deg**

**PTI**

Emissions Unit ID: P001

**Issued: To be entered upon final issuance**

**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

**Degussa Engineered Carbons LP**  
**PTI**  
**Issu**

**Facility ID: 0684010049**

Emissions Unit ID: P001

**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.

| <u>Operations, Property,<br/>and/or Equipment</u>  | <u>Applicable Rules/Requirements</u>  |
|--|---|
| P001 - Carbon Black Unit<br>Number 1   | OAC rule 3745-31-05(A)(3)   |
| (Administrative<br>modification to PTI<br>06-06770 issued May 27,<br>2004 to increase<br>feedstock oil sulfur<br>content.) | OAC rules 3745-31-10 through<br>20<br><br>OAC rule 3745-31-05(C)<br>(To avoid PSD review) |

Deg

PTI

Emissions Unit ID: P001

**Issued: To be entered upon final issuance**

|                              | <u>Applicable Emissions Limitations/Control Measures</u>   | PM/PM <sub>10</sub> emissions.   |
|------------------------------|--|--|
| OAC rule<br>3745-17-11(B)(1) | The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and 40 CFR Part 52.21.  | See section A.I.2.b below.<br>Total emissions from emission units P001, P002, P005, P006, P011 and P012, combined, shall not exceed the following based upon a rolling, 12-month summation of the emissions:                 |
| OAC rule<br>3745-18-06(E)(2) | See section A.I.2.a below<br>Total emissions from emissions units P001 and P002, combined, shall be limited to the following , except during periods of start-up and shutdown, from the flare: | 4547.0 tons of SO <sub>2</sub><br>508.0 tons of NO <sub>x</sub><br>84.9 tons of PM/PM <sub>10</sub> .  |
|                              | 4.0% sulfur content, 544.3 lbs/hr, and 2,384 tons of SO <sub>2</sub> based upon a rolling, 365-day summation of the SO <sub>2</sub> emissions. See Section A.I.2.c.                            | Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed the following based upon a rolling, 365 day summation of the emissions:<br>2556.0 tons of CO; and,<br>151.0 tons of VOC. |
|                              | 43.7 lbs/hr and 191.4 tons of NO <sub>x</sub> based upon a rolling, 12-month summation of the NO <sub>x</sub> emissions.   | See Section A.II.5 below.<br>Visible particulate emissions shall not exceed 20% opacity, as a six-minute average except as provided by rule.   |
|                              | 9.4 lbs/hr and 41.2 tons of VOC based upon a rolling, 12-month summation of the VOC emissions.   | The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).   |
|                              | 354.6 lbs/hr and 1,553.1 tons of CO based upon a rolling, 12-month summation of the CO emissions.  | The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).   |
|                              | 5.7 lbs/hr and 24.9 tons of PM/PM <sub>10</sub> based upon a rolling, 12-month summation of the  |  |

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## 2. Additional Terms and Conditions

**2.a** This emissions unit shall be limited to the following emissions during start-up and shutdown (vent emissions):

6.8 lbs/hr and 0.3 tons/yr SO<sub>2</sub>;  
380 lbs/hr and 15 tons/yr VOC;  
14,254 lbs/hr and 577 tons/yr CO;  
8.4 lbs/hr and 0.3 tons/yr of NO<sub>x</sub>;  
7.8 lbs/hr and 0.3 tons/yr of PM/PM<sub>10</sub>;  
154 lbs/hr and 6.2 tons/yr of H<sub>2</sub>S;  
30 lbs/hr and 1.2 tons/yr of COS;  
70 lbs/hr and 2.8 tons/yr of CS<sub>2</sub>; and  
37 lbs/hr and 1.5 tons/yr of HCN.

**2.b** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

**2.c** Emissions of sulfur dioxide shall be monitored utilizing the Sulfur Management System (SMS), as submitted by the permittee in September 2001, and incorporated in the operational, monitoring, recordkeeping and reporting requirements of this permit. The SMS relies upon the monitoring of feedstock sulfur content, feedstock oil feedrate, and retention of sulfur in the product to demonstrate ongoing compliance with SO<sub>2</sub> emission limitations. Equations detailing the relationship between these parameters can be found in Section A.III.10.

## II. Operational Restrictions

1. This emissions unit shall:

- a. utilize feedstock oil which contains no more than 4% sulfur;
- b. be equipped with a product exhaust bag filter with a design efficiency not less than 99.7%; and
- c. employ a flare with a design destruction efficiency of 95% for particulate emissions and 98 % for CO and VOC.

2. This emissions unit shall be limited to 81 hours per year for all start-up and shutdown operations.

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3. A pilot flame shall be maintained at all times in the flare's pilot light burner.
4. If the mass flow rate meter employed to continuously monitor the feedstock oil feed rate is not in operation, the production of carbon black shall be automatically terminated.
5. Maximum annual production of carbon black for emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed 223,000,000 pounds as a rolling, 12-month summation of the carbon black production rates (this limitation shall adjust downward as a result of any increases in feedstock sulfur content, per SMS term A.I.2.c.). This emissions unit is currently permitted and operating, and as such, has existing records of production and emissions, thereby eliminating the need to establish the first year's cumulative rolling, 12-month summation of carbon black production. The existing, previous 12-month record of 223,000,000 pounds of carbon black production shall be maintained as the rolling, monthly record, upon the issuance of this permit.

### **III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

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2. The permittee shall keep daily records for all start-up and shutdown periods that contain the following information:
  - a. the date of each start-up and/or shutdown;
  - b. the time period during which the start-up or shutdown occurred;
  - c. the year-to-date, total hours of all start-up and shutdown periods; and

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- d. at the end of each year, the permittee shall add and maintain a record of the total hours and total emissions from start-up/shutdown events, as calculated in Section A.V.3 .
3. The permittee shall maintain records of the feedstock oil for this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
  - a. Alternative 1:

For each shipment of feedstock oil received for this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of the feedstock oil and maintain records of the total quantity of feedstock oil received, and the permittee's or oil supplier's analyses for sulfur content and density.
  - b. Alternative 2:

The permittee shall collect a representative grab sample of the feedstock oil for this emissions unit for each day when the emissions unit is in operation. If additional feedstock oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to create a composite sample that is representative of the average quality of feedstock oil used in this emissions unit. The permittee shall maintain records of the total quantity of feedstock oil used each day, and the permittee's analyses for sulfur content and density.
4. The permittee shall measure the sulfur content (in weight %) of the feedstock oil in accordance with the procedures specified in ASTM standard D4294, "Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-ray Fluorescence Spectrometry". In addition, the permittee shall measure the density (in pounds per gallon) of the feedstock oil in accordance with the procedures specified in ASTM standard D287, "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)".
5. For each day of operation of this emissions unit, the permittee shall collect a sufficient number of grab samples of carbon black product to create a composite sample that is representative of the average quality of the carbon black produced in this emissions unit. The permittee shall measure and maintain a record of the sulfur content ( in weight %) of each composite sample of carbon black product in accordance with the procedures specified in ASTM standard D1619, "Standard Test Method for Carbon Black- Sulfur Content".

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6. The permittee shall properly install, operate, and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

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The permittee shall record the following information each day:

- a. all periods during which there was no pilot flame;
- b. the corrective action taken to reestablish the flame; and
- c. the downtimes for the flare, monitoring equipment, and the associated emissions unit.

7. The permittee shall properly operate and maintain a Micro Motion mass flow rate meter, model number D100, or equivalent monitor, to continuously monitor the feedstock oil feed rate when the emissions unit is in operation and producing carbon black. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

The permittee shall record the following information each day:

- a. all periods during which the Micro Motion mass flow rate meter, model number D100, or equivalent monitor, was not in operation while the emissions unit was in operation;
- b. all downtimes for the monitoring equipment and the associated emissions unit, while the emissions unit was in operation; and,
- c. the corrective actions taken to reestablish correct operation of the mass flow rate meter.

8. The permittee shall maintain monthly records of the following information:

- a. the carbon black production rate, in pounds per month, for this emissions unit;
- b. the production rate for emissions units P001, P002, P005, P006, P011, and P012 (tons carbon black/month);
- c. the rolling, 12-month summation of the production rates for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling, 12 month period);
- d. the total hours of operation of this emissions unit;

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- e. the total emissions of SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO and PM/PM<sub>10</sub>, calculated by multiplying the hourly rate as determined in Section A.V. by the hours of operation (d);
  - f. the rolling, 12-month summation of emissions for NO<sub>x</sub>, PM/PM<sub>10</sub>, VOC, and CO each, for this emissions unit and P002, combined, in tons; and,
  - g. the rolling, 12-month summation of emissions for SO<sub>2</sub>, PM/PM<sub>10</sub>, and NO<sub>x</sub> each, for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown events.
9. The permittee shall maintain daily records of the following information for this emissions unit:
- a. the OEPA identification number of this emissions unit;
  - b. the current day, month, and year;
  - c. the grade of each feedstock oil processed (% sulfur);
  - d. the yield of each feedstock oil, defined as the average amount of carbon black produced, per gallon of feedstock oil used during the day (lbs carbon black/gallons of feedstock oil);
  - e. the sulfur content of each feedstock oil, in weight percent;
  - f. the sulfur content of the carbon black product, in weight percent;
  - g. the feedstock oil feed rate, in gallons per hour, for each hour of operation continuously monitored using a Micro Motion mass flow rate meter, model number D100 or an equivalent monitor;
  - h. the feedstock oil density, in pounds per gallon (from A.III.4);
  - i. the carbon black production rate, in pounds per hour for each hour of operation, [(d) multiplied by (g)];
  - j. the total potential uncontrolled SO<sub>2</sub> emissions associated with this carbon black unit, in pounds per hour, calculated as specified in A.III.10;
  - k. the average hourly SO<sub>2</sub> emission rate for each feedstock oil, in pounds per

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hour, [j. multiplied by the factor 0.66\*];

\* The constant above may change with future testing on the capture efficiency of the dryer and/or the emissions split between this unit and/or P002 and its dryer. The current constant is based on 66% of uncontrolled emissions venting to the flare and 34% venting to the dryer associated with this unit (P005).

- l. the average hourly SO<sub>2</sub> emission rate for each feedstock oil, in pounds per hour, for P001 and P002, combined;
  - m. the total hours of operation for each feedstock oil;
  - n. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (k) x (m) for all of the feedstock oils);
  - o. the rolling, 365-day SO<sub>2</sub> emission rate for all feedstock oils, in tons;
  - p. the rolling, 365-day SO<sub>2</sub> emission rate for all feedstock oils, for emissions units P001 and P002, combined, in tons;
  - q. the daily CO and VOC emission rate for each feedstock oil used in emissions units P001 and P002, in pounds per day, calculated by multiplying the hourly emission rate as determined in Section A.V.1.c and e by the hours of operation (m); and,
  - r. the rolling, 365-day CO and VOC emission rate for emissions units P001, P002, P005, P006, P011, and P012, in tons, including emissions from start-up and shutdown events.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = [(FSR \times SFSP) - (CBPR \times SCBP)] \times 64/32$$

where:

E = sulfur dioxide emission rate, in pounds per hour;

FSR = maximum recorded feedstock oil feed rate, in pounds per hour (from A.III.9.g and h);

SFSP = feedstock oil sulfur content, in weight percent (from A.III.4);

CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.i);

SCBP = carbon black sulfur content, in weight percent (from A.III.5); and,

64/32 = constant to convert molecular weight rate of sulfur to molecular weight of sulfur dioxide.

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NOTE: The permittee conservatively assumes all of the sulfur emissions are emitted as sulfur dioxide emissions.

**IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the Micro Motion mass flow rate meter or equivalent flow

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meter, model number D100 or equivalent flow meter, was not functioning properly. The reports shall include the date, time, and duration of each such period, and the corrective action(s) to ensure correct operation.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the sulfur content limitation. The reports shall include the date, time, and duration of each such period of time when the sulfur content of the oil used in this emissions unit is greater than 4 percent, and the corrective action to bring the sulfur content below 4percent.
4. The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the annual start-up and shutdown emission limitations as listed in Section A.II.2.
5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack of this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
6. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001 and P002 that identify each day the combined emission limitation(s):
  - a. exceeded the average hourly SO<sub>2</sub> emission rate of 544.3 lbs/hr and the actual average hourly SO<sub>2</sub> emissions for each such day;
  - b. exceeded the 365-day, rolling SO<sub>2</sub> emission limitation of 2,384 tons, and the actual SO<sub>2</sub> emissions for each such day; and,
  - c. exceeded the rolling, 12-month NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub> emission limitations as listed in A.I.1.
7. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001, P002, P005, P006, P011, and P012, combined, that identify:
  - a. all exceedances of the rolling, 12-month production rate limitation of 223,000,000 pounds of carbon black;
  - b. each month during which the rolling, 12-month emission rates exceeded the rolling, 12-month emission limitations listed in A.I.1; and,

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- c. each day during which the rolling, 365-day CO and VOC emission rates exceeded 2,983 tons, and 80.4 tons respectively. The report shall also include the actual CO and VOC emissions for each day a deviation occurred .

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Quarterly deviation reports shall be submitted as required in the General Terms and Conditions of this permit.

8. The permittee shall submit annual reports that include the following information:
  - a. the total hours of start-up and shutdown operations for this emissions unit for the previous calendar year, and the emissions calculated from start-up and shutdown events, calculated and recorded as required in Section A.III.2;
  - b. the total hours of operation of this emissions unit;
  - c. the total carbon black production rate from emissions units P001, P002, P005, P006, P011, and P012, combined, for each 12-month period ending during the calendar year; and,
  - d. the total SO<sub>2</sub> emissions (including all calculations), in tons, from emissions units P001, P002, P005, P006, P011, and P012 for the previous calendar year using the monthly emission records required in Sections A.III.3, A.III.8, and A.III.9.

These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 of each year.

**V. Testing Requirements**

1. Compliance with the emission limitations in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:

The emission factors used in the compliance calculations below, as pounds of pollutant per 1,000 pounds of product or per 1,000 gallons of oil burned, shall be adjusted, as derived from the most recent emission test results. It shall be assumed that the emissions per gallon of process oil or per pound of carbon black produced are similar on all carbon black units, prior to control. The pounds of each pollutant per 1,000 pounds of product or per 1,000 gallons of oil shall be determined from the testing results obtained from emissions units P001 and P002, prior to the flare.

- a. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 544.3 lbs/hr of SO<sub>2</sub> during normal operations.

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Applicable Compliance Method:

Compliance may be demonstrated based upon the monitoring and recordkeeping specified in sections A.III. .

If required, compliance shall also be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 6 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

b. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 2,384 tons of SO<sub>2</sub> based upon a rolling, 365-day summation of the SO<sub>2</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the monitoring and recordkeeping required in Section A.III. , .

c. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 9.4 lbs/hr of VOC during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the recordkeeping maintained in Section A.III.9 and performance of the following equation:

$$E = (VEF \times GOB)(0.66)(1-0.98)$$

Where

E = VOC emission rate from emissions units P001 and P002, combined, in pounds per hour

VEF is the VOC emission factor per 1,000 gallons of oil burned (200 lbs VOC/1,000 gal oil burned, submitted by the permittee and based upon their

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best engineering judgement and knowledge of the process).

GOB is the total gallons of oil burned per hour for emissions units P001 and P002 combined.

(0.66) 66% of the raw tailgas is vented to the flare serving emissions units P001/P002

(1-0.98) 98% is the designed destruction efficiency of the flare.

\* The constant above may change with future testing on the capture efficiency of the dryer and/or the emissions split between this unit and/or P002 and its dryer.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 18, 25 or 25A, as appropriate, as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

d. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 41.2 tons of VOC based upon a rolling, 12-month summation of the VOC emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified Section A.III.8.f.

e. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 354.6 lbs/hr of CO during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the following equation:

$$E = (CEF \times GOB)(0.66)(1-0.98)$$

Where

E = CO emission rate from emissions units P001 and P002, combined, in pounds per hour

CEF is the CO emission factor per 1,000 gallons of oil burned or per 1,000

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pounds of carbon black produced, derived from the most recent emission test results for emissions units P001 and P002, and/or P011 and P012 prior to their thermal incinerator. Until testing is complete "7,500 lb CO/1,000 gallons of oil burned", shall be used to calculate emissions, submitted by the permittee and based upon their best engineering judgement and knowledge of the process.

GOB is the total gallons of oil burned per hour from emissions units P001 and P002, combined, (or if the permittee develops a factor per 1,000 pounds of product, pounds of carbon black per hour from emissions units P001 and P002).

(0.66) 66% of the raw tailgas is vented to the flare serving emissions units P001/P002

(1-0.98) 98 % is the designed destruction efficiency of the flare.

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\* The constant above may change with future testing on the capture efficiency of the dryer and/or the emissions split between this unit and/or P002 and its dryer.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 10 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

f. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 1,553.1 tons of CO based upon a rolling, 12-month summation of the CO emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

g. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 43.7 lbs/hr of NO<sub>x</sub> during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the following equation:

$$E = NEF * PPPH$$

Where

E = NO<sub>x</sub> emission rate from emissions units P001 and P002, combined, in pounds per hour

NEF is the NO<sub>x</sub> emission factor per 1,000 pounds of carbon black produced or per 1,000 gallons of oil burned, derived from the most recent emission test results for emissions units P001, P002, and/or P011 and P012 prior to their thermal incinerator. Until testing is complete "2.14 lbs NO<sub>x</sub>/1,000 pounds of product produced", shall be used to calculate emissions, submitted by the permittee and based upon their best engineering judgement and knowledge of

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the process.

PPPH is the pounds of product produced per hour from emissions units P001 and P002, combined ,(or if the permittee develops a factor per gallons of oil burned, the gallons of oil burned per hour).

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If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 7 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

h. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 191.4 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the NO<sub>x</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

i. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 5.7 lbs/hr of PM/PM<sub>10</sub> during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the following equation:

$$E = PEM * PPPH$$

where

E = PM/PM<sub>10</sub> emission rate from *emissions units* P001 and P002, combined, in pounds per hour

PEM is the PM emission factor per 1,000 pounds of carbon black produced or per 1,000 gallons of oil burned, derived from the most recent emission test results for emissions units P001 and P002, and/or P011 and P012, prior to their thermal incinerator. Until testing is completed, "0.278 lb PM/1,000 lb of product" shall be used to calculate emissions, submitted by the permittee based upon their best engineering judgement and knowledge of the process. (This emission factor takes into account the 95% control efficiency of the flare.) ; and

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PPPH is the pounds of product produced per hour from emissions units P001 and P002, combined,(or if the permittee develops a factor per gallons of oil burned, the gallons of oil burned per hour).

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5, or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202.

j. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 24.9 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the PM/PM<sub>10</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

k. Emission Limitation:

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

Applicable Compliance Method:

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

l. Emission Limitations:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined shall not exceed the following as rolling, 12-month emission summations:

4547.0 tons of SO<sub>2</sub>;  
508.0 tons of NO<sub>x</sub>; and,

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84.9 tons of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.8.

m. Emission Limitation:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 365-day emission summations:

151.0 tons of VOC; and,  
2556.0 tons of CO.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.9. % sulfur.

2. The hourly limitations for start-up and shutdown operations in Section A.I.2.a are the uncontrolled emission rates determined by the known chemical reaction of the process and represent the potentials to emit for this emissions unit; therefore, compliance with the hourly emission limitations is assumed. Compliance with the annual start-up and shutdown emission limitations in Section A.I.2.a. of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

0.3 tons per year of SO<sub>2</sub> during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 6.8 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

b. Emission Limitation:

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15 tons per year of VOC during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 380 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

c. Emission Limitation:

577 tons per year of CO during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 14,254 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

d. Emission Limitation:0.3 tons per year of NO<sub>x</sub> during start-up/shutdownApplicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 8.4 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

e. Emission Limitation:

0.3 tons per year of particulate emissions during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 7.8 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

f. Emission Limitation:6.2 tons per year of H<sub>2</sub>S during start-up/shutdown

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Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 154 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

g. Emission Limitation:

1.2 tons per year of COS during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 30 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

h. Emission Limitation:2.8 tons per year of CS<sub>2</sub> during start-up/shutdownApplicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 70 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

i. Emission Limitation:

1.5 tons per year of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 37 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

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4. The permittee shall conduct, or have conducted, emission testing for emissions units P001 and P002, combined, in accordance with the following requirements:
  - a. emission testing shall be conducted no later than 60 days after emissions units P002 and P006 reinstate operation. This requirement does not supercede any testing requirements contained in the permittee's Title V operating permit.
  - b. the emission testing shall be conducted while emissions units P001 and P002 are operating at or near their maximum capacities, unless otherwise specified or approved by Ohio EPA's Southeast District Office. Additional testing under multiple "worst-case" scenarios may be required for SO<sub>2</sub>.
  - c. the emission testing shall be conducted for emissions units P001 and P002 to demonstrate compliance with the combined allowable emission limitations for CO, VOC, PM/PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>.
  - d. the following test methods shall be employed to demonstrate compliance with the allowable emission limitations:

for PM/PM<sub>10</sub>, Methods 1 through 5 of 40 CFR Part 60, Appendix A, or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202;  
for SO<sub>2</sub>, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A;  
for VOC, Methods 1 through 4 and Method 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A;  
for NO<sub>x</sub>, Methods 1 through 4 and Method 7 of 40 CFR Part 60, Appendix A;  
and, for CO, Methods 1 through 4 and Method 10 of 40 CFR Part 60, Appendix A.

alternative U.S. EPA-approved test methods may be used with prior approval from the Ohio EPA.
  - e. the emission test(s) shall be conducted while emissions units P005 and P006 and emissions units P001 and P002 are all operating simultaneously.
  - f. not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Southeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s), and the maximum feedstock oil feedrates to be used during the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, Southeast District Office's refusal to accept the results of the

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emission test(s).

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

a comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Southeast District Office.

## **VI. Miscellaneous Requirements**

None.

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**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.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> |
|---|--------------------------------------|--|
| P001 - Carbon Black Unit Number 1             | None                                 | None   |

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**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.

| <u>Operations, Property, and/or Equipment</u>  | <u>Applicable Rules/Requirements</u>  |
|--|---|
| P002 - Carbon Black Unit Number 2<br><br>(Administrative modification to PTI 06-06770 issued May 27, 2004 to increase feedstock oil sulfur content.) | OAC rule 3745-31-05(A)(3)<br><br>OAC rules 3745-31-10 through 20<br><br>OAC rule 3745-31-05(C)<br><br>(To avoid PSD review) |

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|                           | <u>Applicable Emissions Limitations/Control Measures</u>   | Emissions Unit ID: P002  |
|---------------------------|--|--|
| OAC rule 3745-17-07(A)    | <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and 40 CFR Part 52.21.</p> <p>See Section A.I.2.a below</p>  | <p>Total emissions from emissions units P001, P002, P005, P006, P011 and P012, combined, shall not exceed the following based upon a rolling, 12-month summation of the emissions:</p> <p>4547.0 tons of SO<sub>2</sub>;<br/>508.0 tons of NO<sub>x</sub>; and,<br/>84.9 tons of PM/PM<sub>10</sub>.</p>   |
| OAC rule 3745-17-11(B)(1) | <p>Total emissions from emissions units P001 and P002, combined, shall be limited to the following , except during periods of start-up and shutdown, from the flare:</p>   | <p>Total emissions from emissions units P001, P002, P005, P006, P011 and P012, combined, shall not exceed the following based upon a rolling, 365-day summation of the emissions:</p>  |
| OAC rule 3745-18-06(E)(2) | <p>4.0% sulfur content, 544.3 lbs/hr, and 2,384 tons of SO<sub>2</sub> based upon a rolling, 365-day summation of the SO<sub>2</sub> emissions.</p> <p>See Section A.I.2.c below.</p> <p>43.7 lbs/hr and 191.4 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the NO<sub>x</sub> emissions.</p> <p>9.4 lbs/hr and 41.2 tons of VOC based upon a rolling, 12-month summation of the VOC emissions.</p> <p>354.6 lbs/hr and 1,553.1 tons of CO based upon a rolling, 12-month summation of the CO emissions.</p> <p>5.7 lbs/hr and 24.9 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the PM/PM<sub>10</sub> emissions.</p> <p>See Section A.I.2.b below.</p> | <p>2556.0 tons of CO; and,<br/>151.0 tons of VOC.</p> <p>See Section A.II.5 below.</p> <p>Visible particulate emissions shall not exceed 20% opacity, as a 6 -minute average except as provided by rule.</p> <p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p> <p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p> |

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**Issued: To be entered upon final issuance****2. Additional Terms and Conditions**

**2.a** This emissions unit shall be limited to the following emissions during start-up and shutdown (vent emissions):

6.8 lbs/hr and 0.3 tons/yr SO<sub>2</sub>;  
380 lbs/hr and 15 tons/yr VOC;  
14,254 lbs/hr and 577 tons/yr CO;  
8.4 lbs/hr and 0.3 tons/yr of NO<sub>x</sub>;  
7.8 lbs/hr and 0.3 tons/yr of PM/PM<sub>10</sub>;  
154 lbs/hr and 6.2 tons/yr of H<sub>2</sub>S;  
30 lbs/hr and 1.2 tons/yr of COS;  
70 lbs/hr and 2.8 tons/yr of CS<sub>2</sub>; and,  
37 lbs/hr and 1.5 tons/yr of HCN.

**2.b** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

**2.c** Emissions of sulfur dioxide shall be monitored utilizing the Sulfur Management System (SMS), as submitted by the permittee in September 2001, and incorporated in the operational, monitoring, recordkeeping and reporting requirements of this permit. The SMS relies upon the monitoring of feedstock sulfur content, feedstock oil feedrate, and retention of sulfur in the product to demonstrate ongoing compliance with SO<sub>2</sub> emission limitations. Equations detailing the relationship between these parameters can be found in Section A.III.10.

**II. Operational Restrictions**

1. This emissions unit shall:

- a. utilize feedstock oil which contains no more than 4% sulfur;
- b. be equipped with a product exhaust bag filter with a design efficiency not less than 99.7%; and,
- c. employ a flare with a design destruction efficiency of 95 % for particulate emissions and 98% for CO and VOC.

2. This emissions unit shall be limited to 81 hours per year for all start-up and shutdown operations.

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3. A pilot flame shall be maintained at all times in the flare's pilot light burner.
4. If the mass flow rate meter employed to continuously monitor the feedstock oil feed rate is not in operation, the production of carbon black shall be automatically terminated.
5. Maximum annual production of carbon black for emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed 223,000,000 pounds as a rolling, 12-month summation of the carbon black production rates (this limitation shall adjust downward as a result of any increases in feedstock sulfur content, per SMS term A.I.2.c.). This emissions unit is currently permitted and operating, and as such, has existing records of production and emissions, thereby eliminating the need to establish the first year's cumulative rolling, 12-month summation of carbon black production. The existing, previous 12-month record of 223,000,000 pounds of carbon black shall be maintained as the rolling, monthly record, upon the issuance of this permit.

### **III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform daily checks, when the emissions unit is in operation and when the weather conditions allow, for any visible particulate emissions from the stack serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal emissions;
  - d. the total duration of any visible emission incident; and,
  - e. any corrective actions taken to minimize or eliminate the visible emissions.

If visible emissions are present, a visible emission incident has occurred. The observer does not have to document the exact start and end times for the visible emission incident under item (d) above or continue the daily check until the incident has ended. The observer may indicate that the visible emission incident was continuous during the observation period (or, if known, continuous during the operation of the emissions unit). With respect to the documentation of corrective actions, the observer may indicate that no corrective actions were taken if the visible emissions were representative of normal operations, or specify the minor corrective actions that were taken to ensure that the emissions unit continued to operate under

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normal conditions, or specify the corrective actions that were taken to eliminate abnormal visible emissions.

2. The permittee shall keep daily records for all start-up and shutdown periods that contain the following information:
  - a. the date of each start-up and/or shutdown;
  - b. the time period during which the start-up or shutdown occurred;
  - c. the year-to-date, total hours of all start-up and shutdown periods; and,

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- d. at the end of each year, the permittee shall add and maintain a record of the total hours and total emissions from start-up/shutdown events, as calculated in Section A.V.3.
3. The permittee shall maintain records of the feedstock oil for this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
  - a. Alternative 1:

For each shipment of feedstock oil received for this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of the feedstock oil and maintain records of the total quantity of feedstock oil received, and the permittee's or oil supplier's analyses for sulfur content and density.
  - b. Alternative 2:

The permittee shall collect a representative grab sample of the feedstock oil for this emissions unit for each day when the emissions unit is in operation. If additional feedstock oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to create a composite sample that is representative of the average quality of feedstock oil used in this emissions unit. The permittee shall maintain records of the total quantity of feedstock oil used each day, and the permittee's analyses for sulfur content and density.
4. The permittee shall measure the sulfur content (in weight %) of the feedstock oil in accordance with the procedures specified in ASTM standard D4294, "Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-ray Fluorescence Spectrometry". In addition, the permittee shall measure the density (in pounds per gallon) of the feedstock oil in accordance with the procedures specified in ASTM standard D287, "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)".
5. For each day of operation of this emissions unit, the permittee shall collect a sufficient number of grab samples of carbon black product to create a composite sample that is representative of the average quality of the carbon black produced in this emissions unit. The permittee shall measure and maintain a record of the sulfur content (in weight %) of each composite sample of carbon black product in accordance with the procedures specified in ASTM standard D1619, "Standard Test Method for Carbon Black- Sulfur Content".

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6. The permittee shall properly install, operate, and maintain a device to continuously monitor the pilot flame when the emissions unit is in operation. The monitoring device and any recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

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The permittee shall record the following information each day:

- a. all periods during which there was no pilot flame;
- b. the corrective action taken to reestablish the flame; and,
- c. the downtimes for the flare, monitoring equipment, and the associated emissions unit.

7. The permittee shall properly operate and maintain a Micro Motion mass flow rate meter, model number D100, or equivalent monitor, to continuously monitor the feedstock oil feed rate when the emissions unit is in operation and producing carbon black. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

The permittee shall record the following information each day:

- a. all periods during which the Micro Motion mass flow rate meter, model number D100, or equivalent monitor, was not in operation while the emissions unit was in operation;
- b. all downtimes for the monitoring equipment and the associated emissions unit, while the emissions unit was in operation; and,
- c. the corrective actions taken to reestablish correct operation of the mass flow rate meter.

8. The permittee shall maintain monthly records of the following information:

- a. the carbon black production rate, in pounds per month, for this emissions unit;
- b. the production rate for emissions units P001, P002, P005, P006, P011, and P012 (tons carbon black/month);
- c. the rolling, 12-month summation of the production rates for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling, 12 month period);
- d. the total hours of operation of this emissions unit;

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- e. the total emissions of SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub>, calculated by multiplying the hourly rate as determined in Section A.V. by the hours of operation (d);
  - f. the rolling, 12-month summation of emissions for NO<sub>x</sub>, PM/PM<sub>10</sub>, VOC, and CO each, for this emissions unit and P001, combined, in tons; and,
  - g. the rolling, 12-month summation for SO<sub>2</sub>, PM/PM<sub>10</sub>, and NO<sub>x</sub> each, for emissions units P001, P002, P005, P006, P011 and P012, combined, in tons, including emissions from start-up and shutdown.
9. The permittee shall maintain daily records of the following information for this emissions unit:
- a. the OEPA identification number of this emissions unit;
  - b. the current day, month, and year;
  - c. the grade of each feedstock oil processed (% sulfur);
  - d. the yield of each feedstock oil, defined as the average amount of carbon black produced, per gallon of feedstock oil used during the day (lbs carbon black/gallons of feedstock oil);
  - e. the sulfur content of each feedstock oil, in weight percent;
  - f. the sulfur content of the carbon black product, in weight percent;
  - g. the feedstock oil feed rate, in gallons per hour for each hour of operation continuously monitored using a Micro Motion mass flow rate meter, model number D100 or an equivalent monitor;
  - h. the feedstock oil density, in pounds per gallon (from A.III.4);
  - i. the carbon black production rate, in pounds per hour for each hour of operation, [(d) multiplied by (g)];
  - j. the total potential uncontrolled SO<sub>2</sub> emissions associated with this carbon black unit; as calculated in Section A.III.10;
  - k. the average hourly SO<sub>2</sub> emission rate for each feedstock oil, in pounds per

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hour, [ j. multiplied by the constant 0.66\*];

- \* The constant applied above may change with future testing on the capture efficiency of the dryer and/or the emissions split between this emissions unit and/or P001 and its dryer. The current constant is based on 66% of uncontrolled emissions venting to the flare and 34% venting to the dryer associated with this unit (P005).
  - l. the average hourly SO<sub>2</sub> emission rate for each feedstock oil, in pounds per hour, for emissions units P001 and P002, combined;
  - m. the total hours of operation for each feedstock oil;
  - n. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (k x (m) for all of the feedstock oils);
  - o. the rolling, 365-day SO<sub>2</sub> emission rate for all feedstock oils, in tons;
  - p. the rolling, 365-day SO<sub>2</sub> emission rate for all feedstock oils, for emissions units P001 and P002, combined, in tons, ;
  - q. the average daily CO and VOC emission rate for each feedstock oil used in emissions units P001 and P002 , in pounds per day, calculated by multiplying the hourly emission rate as determined in Section A.V.1.c & e by the hours of operation (m); and,
  - r. the rolling, 365-day CO and VOC emission rate for emissions units P001, P002, P005, P006, P011 and P012, in tons, including emissions from start-up and shutdown.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = ( [(FSR \times SFSP) - (CBPR \times SCBP)] ) \times 64/32$$

where:

E = sulfur dioxide emission rate, in pounds per hour;

FSR= maximum recorded feedstock oil feed rate, in gallons per hour (from A.III.9.g and h);

SFSP = feedstock oil sulfur content, in weight percent (from A.III.4);

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CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.i);

SCBP = carbon black sulfur content, in weight percent (from A.III.5); and,

64/32 = constant to convert molecular weight rate of sulfur to molecular weight of sulfur dioxide.

NOTE: The permittee conservatively assumes all of the sulfur emissions are emitted as sulfur dioxide emissions.

#### **IV. Reporting Requirements**

1. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the pilot flame was not functioning properly. The reports shall include the date, time, and duration of each such period.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the Micro Motion mass flow rate meter or equivalent flow meter, model number D100 or equivalent flow meter, was not functioning properly. The reports shall

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include the date, time, and duration of each such period, and the corrective action(s) to ensure correct operation.

3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the sulfur content limitation. The reports shall include the date, time, and duration of each such period of time when the sulfur content of the oil used in this emissions unit is greater than 4 percent, and the corrective action to bring the sulfur content below 4percent.
4. The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the annual start-up and shutdown emissions limitations as listed in Section A.II.2.
5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the stack of this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
6. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001 and P002 that identify each day the combined emission limitation(s):
  - a. exceeded the average hourly SO<sub>2</sub> emission rate of 544.3 lbs/hr, and the actual average hourly SO<sub>2</sub> emissions for each such day;
  - b. exceeded the 365-day, rolling SO<sub>2</sub> emission limitation of 2,384 tons, and the actual SO<sub>2</sub> emissions for each such day; and,
  - c. exceeded the rolling, 12-month NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub> emission limitations as listed in A.I.1.
7. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001, P002, P005, P006, P011, and P012, combined, that identify:
  - a. all exceedances of the rolling, 12-month production rate limitation of 223,000,000 pounds of carbon black;
  - b. each month during which the rolling, 12-month emission rates exceeded the rolling, 12-month emission limitations listed in A.I.1; and,

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- c. each day during which the rolling, 365-day CO and VOC emission rates exceeded 2,983 tons and 80.4 tons, respectively. The report shall also include the actual CO and VOC emissions for each day a deviation occurred .

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Quarterly deviation reports shall be submitted as required in the General Terms and Conditions of this permit.

8. The permittee shall submit annual reports that include the following information:
  - a. the total hours of start-up and shutdown operations for this emissions unit for the previous calendar year, and the emissions calculated from start-up and shutdown events, calculated and recorded as required in Section A.III.2;
  - b. the total hours of operation of this emissions unit;
  - c. the total carbon black production rate from emissions units P001, P002, P005, P006, P011, and P012, combined, for each 12-month period ending during the calendar year; and,
  - d. the total SO<sub>2</sub> emissions (including all calculations), in tons, from emissions units P001, P002, P005, P006, P011, and P012 for the previous calendar year using the monthly emission records required in Sections A.III.3, A.III.8, and A.III.9.

These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 of each year.

**V. Testing Requirements**

1. Compliance with the emission limitations in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:

The emission factors used in the compliance calculations below, as pounds of pollutant per 1,000 pounds of product or per 1,000 gallons of oil burned, shall be adjusted, as derived from the most recent emission test results. It shall be assumed that the emissions per gallon of process oil or per pound of carbon black produced are similar on all carbon black units, prior to control. The pounds of each pollutant per 1,000 pounds of product or per 1,000 gallons of oil shall be determined from the testing results obtained from emissions units P001 and P002, prior to the flare.

- a. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 544.3 lbs/hr of SO<sub>2</sub> during normal operations.

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Compliance may be demonstrated based upon the monitoring and recordkeeping specified in sections A.III. .

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 6 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

b. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 2,384 tons of SO<sub>2</sub> based upon a rolling, 365-day summation of the SO<sub>2</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping required in Section A.III

c. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 9.4 lbs/hr of VOC during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the recordkeeping maintained in Section A.III.9and performance of the following equation:

$$E = (VEF * GOB)(0.66) (1-0.98)$$

Where

E = VOC emission rate from emissions units P001 and P002, combined, in pounds per hour

VEF is the VOC emission factor per 1,000 gallons of oil burned (200 lbs VOC/1,000 gal oil burned, submitted by the permittee and based upon their

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best engineering judgement and knowledge of the process).

GOB is the total gallons of oil burned per hour for emissions units P001 and P002 combined.

(0.66) 66% of the raw tailgas is vented to the flare serving emissions units P001 and P002.

(1-0.98) 98 % is the designed destruction efficiency of the flare.

\* The constant above may change with future testing on the capture efficiency of the dryer and/or the emissions split between this unit and/or P002 and its dryer.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 18, 25 or 25A, as appropriate, as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

d. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 41.2 tons of VOC based upon a rolling, 12-month summation of the VOC emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

e. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 354.6 lbs/hr of CO during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the following equation:

$$E = (CEF*GOB)(0.66)(1-0.98)$$

Where

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E = CO emission rate from emissions units P001 and P002, combined, in pounds per hour

CEF is the CO emission factor per 1,000 gallons of oil burned or per 1,000 pounds of carbon black produced, derived from the most recent emission test results for emissions units P001 and P002, and/or P011 and P012 prior to their thermal incinerator. Until testing is complete "7,500 lb CO/1,000 gallons of oil burned", shall be used to calculate emissions, submitted by the permittee and based upon their best engineering judgement and knowledge of the process.

GOB is the total gallons of oil burned per hour from emissions units P001 and P002, combined, (or if the permittee develops a factor per 1,000 pounds of product, pounds of carbon black per hour from emissions units P001 and P002).

(0.66) 66% of raw tailgas is vented to the flare serving emissions units P001 and P002.

(1-0.98) 98% is the designed destruction efficiency of the flare.

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\* The constant above may change with future testing on the capture efficiency of the dryer and/or the emissions split between this unit and/or P002 and its dryer.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 10 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

f. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 1,553.1 tons of CO based upon a rolling, 12-month summation of CO emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

g. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 43.7 lbs/hr of NO<sub>x</sub> during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the following equation:

$$E = NEF * PPPH$$

Where

E = NO<sub>x</sub> emission rate from emissions units P001 and P002, combined, in pounds per hour

NEF is the NO<sub>x</sub> emission factor per 1,000 pounds of carbon black produced or per 1,000 gallons of oil burned, derived from the most recent emission test results for emissions units P001 and P002, and/or P011 and P012 prior to their thermal incinerator. Until testing is complete "2.14 lbs NO<sub>x</sub>/1,000 pounds of product produced", shall be used to calculate emissions, submitted by the permittee and based upon their best engineering judgement and knowledge of

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the process.

PPPH is the pounds of product produced per hour from emissions units P001 and P002, combined, (or if the permittee develops a factor per gallons of oil burned, the gallons of oil burned per hour).

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 4 and Method 7 as set forth in

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"Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

h. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 191.4 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the NO<sub>x</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

i. Emission Limitation:

Total emissions from emissions units P001 and P002, combined, shall be limited to 5.7 lbs/hr of PM/PM<sub>10</sub> during normal operations.

Applicable Compliance Method:

Compliance may be demonstrated based upon the following equation:

$$E = PEM * PPPH$$

where

E = PM/PM<sub>10</sub> emission rate from emissions units P001 and P002, combined, in pounds per hour

PEM is the PM emission factor per 1,000 pounds of carbon black produced or per 1,000 gallons of oil burned, derived from the most recent emission test results for P001 and P002, and/or P011 and P012, prior to their thermal incinerator. Until testing is completed, "0.278 lb PM/1,000 lb of product" shall be used to calculate emissions, submitted by the permittee based upon their best engineering judgement and knowledge of the process. (This emission factor takes into account the 95% control efficiency of the flare.); and

PPPH is the pounds of product produced per hour from emissions units P001 and P002, combined, (or if the permittee develops a factor per gallons of oil burned, the gallons of oil burned per hour).

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If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5, or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202.

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Total emissions from emissions units P001 and P002, combined, shall be limited to 24.9 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the PM/PM<sub>10</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.f.

k. Emission Limitation:

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

Applicable Compliance Method:

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

l. Emission Limitations:

Emissions from emissions units P001, P002, P005, P006, P011, and P012 ,combined, shall not exceed the following as rolling, 12-month emission summations:

4547.0 tons of SO<sub>2</sub>;  
508.0 tons of NO<sub>x</sub>; and,  
84.9 tons of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.8.

m. Emission Limitations:

Emissions from emissions units P001, P002, P005, P006, P011, and P012 ,combined, shall not exceed the following as a rolling, 365-day emissions summations:

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151.0 tons of VOC; and,  
2556.0 tons of CO.

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Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.9.

2. The hourly limitations for start-up and shutdown operations in section A.I.2.a are the uncontrolled emission rates determined by the known chemical reaction of the process and represent the potentials to emit for this emissions unit; therefore, compliance with the hourly emission limitations is assumed. Compliance with the annual start-up and shutdown emission limitation(s) in Section A.I.2.a. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

0.3 tons per year of SO<sub>2</sub> during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 6.8 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

b. Emission Limitation:

15 tons per year of VOC during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 380 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

c. Emission Limitation:

577 tons per year of CO during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 14,254 \text{ lbs/hr} * \text{ actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

d. Emission Limitation:

0.3 tons per year of NO<sub>x</sub> during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 8.4 \text{ lbs/hr} * \text{ actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

e. Emission Limitation:

0.3 tons per year of particulate emissions during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 7.8 \text{ lbs/hr} * \text{ actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

f. Emission Limitation:

6.2 tons per year of H<sub>2</sub>S during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 154 \text{ lbs/hr} * \text{ actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

g. Emission Limitation:

1.2 tons per year of COS during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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$$E(\text{TPY}) = 30 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

h. Emission Limitation:

2.8 tons per year of CS<sub>2</sub> during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 70 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

i. Emission Limitation:

1.5 tons per year of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{TPY}) = 37 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

4. The permittee shall conduct, or have conducted, emission testing for emissions units P001 and P002, combined, in accordance with the following requirements:
  - a. Emission testing shall be conducted no later than 60 days after emissions units P002 and P006 reinitiate operation.
  - b. The emission testing shall be conducted while emissions units P001 and P002 are operating at or near their maximum capacities, unless otherwise specified or approved by Ohio EPA's Southeast District Office. Additional testing under multiple "worst-case" scenarios may be required for SO<sub>2</sub>.
  - c. The emission testing shall be conducted for emissions units P001 and P002 to demonstrate compliance with the combined allowable emission limitations for CO, VOC, PM/PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>.
  - d. The following test methods shall be employed to demonstrate compliance with

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the allowable mass emission rates:

for PM/PM<sub>10</sub>, Methods 1 through 5 of 40 CFR Part 60, Appendix A, or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202;

for SO<sub>2</sub>, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A;

for VOC, Methods 1 through 4 and Method 18, 25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A;

for NO<sub>x</sub>, Methods 1 through 4 and Method 7 of 40 CFR Part 60, Appendix A; and,

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

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

- e. The emission test(s) shall be conducted while emissions units P005 and P006 and emissions units P001 and P002 are all operating simultaneously.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Southeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), the person(s) who will be conducting the test(s), and the maximum feedstock oil feedrates to be used during the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, Southeast District Office's refusal to accept the results of the emission test(s).

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

A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Southeast District Office.

**VI. Miscellaneous Requirements**

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None.

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**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.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> |
|---|--------------------------------------|--|
| P002 - Carbon Black Unit Number 2             | None                                 | None   |

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**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.

| <u>Operations, Property,<br/>and/or Equipment</u>  | <u>Applicable Rules/Requirements</u>             |
|--|--|
| P005 - Unit Number 1<br>Dryer serving emissions<br>unit P001   | OAC rule 3745-31-05(A)(3)                        |
| (Administrative<br>modification to PTI #<br>06-06770, issued on May<br>27, 2004 to increase<br>feedstock oil sulfur<br>content.) | OAC rules 3745-31-10 through 20                  |
|  | OAC rule 3745-31-05(C)<br>(To avoid PSD review.) |
|  | OAC rule 3745-17-07(A)                           |

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|                         | <u>Applicable Emissions Limitations/Control Measures</u>   |  |
|-------------------------|--|--|
| OAC<br>3745-17-11(B)(1) | rule<br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(C), and 40 CFR Part 52.21.   | Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed the following, based upon a rolling 12-month summation:<br>4547.0 tons of SO <sub>2</sub> ;<br>508.0 tons of NO <sub>x</sub> ; and,<br>84.9 tons of PM/PM <sub>10</sub> .  |
| OAC<br>3745-18-06(E)(2) | rule<br>Total emissions from emissions units P005 and P006, combined, shall be limited to the following from the central stack:<br><br>4.0% sulfur content, 290.4 lbs/hr, and 1,272 tons of SO <sub>2</sub> based upon a 365-day rolling summation of the SO <sub>2</sub> emissions basis.<br><br>19.5 lb/hr and 85.4 tons of VOC based upon a rolling, 12-month summation of the VOC emissions.<br><br>56.0 lbs/hr and 219.0 tons of NO <sub>x</sub> based upon a rolling, 12-month summation of the NO <sub>x</sub> emissions.<br><br>299.8 lb/hr and 1313.7 tons of CO based upon a rolling, 12-month summation of the CO emissions.<br><br>6.8 lbs/hr and 29.8 tons of PM/PM <sub>10</sub> based upon a rolling, 12-month summation of the PM/PM <sub>10</sub> .<br><br>See section A.I.2.a below. | Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed the following, based upon a rolling 365-day summation:<br><br>151.0 tons of VOC; and,<br>2556.0 tons of CO.<br><br>Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average except as provided by rule.<br><br>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).<br><br>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). |

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**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

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- 2.b** Emissions of sulfur dioxide shall be monitored utilizing the Sulfur Management System (SMS), as submitted by the permittee in September 2001, and incorporated in the operational, monitoring, recordkeeping and reporting requirements of this permit. The SMS relies upon the monitoring of feedstock sulfur content, feedstock oil feedrate, and retention of sulfur in the product to demonstrate ongoing compliance with SO<sub>2</sub> emission limitations. Equations detailing the relationship between these parameters can be found in Section A.III of the terms and conditions for emissions unit P001.

**II. Operational Restrictions**

1. The pressure drop across the baghouse shall be maintained within the range of 2 to 7 inches of water, while the emissions unit is in operation.
2. Maximum annual production of carbon black for emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed 223,000,000 pounds as a rolling, 12-month summation of the carbon black production rate (this limitation shall adjust downward as a result of any increases in feedstock sulfur content, per SMS term A.I.2.c.). This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, thereby eliminating the need to establish the first year's cumulative rolling, 12-month summation of carbon black production. The existing, previous 12-month record of the 223,000,000 pounds of carbon black production shall be maintained as the rolling monthly record, upon the issuance of this permit.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
2. The permittee shall maintain monthly records of the following information:
  - a. The production rate for emissions units P001, P002, P005, P006, P011, and P012, combined, (tons carbon black/month);
  - b. The rolling, 12-month summation of the production rates for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling 12-months);

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- c. The total hours of operation of this emissions unit;
  - d. The total emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO, VOC, and PM/PM<sub>10</sub> calculated by multiplying the hours of operation during the month (c) for both emissions units P005 and P006, by the pound per hour emissions for each pollutant, as determined in the most recent emission test results and for SO<sub>2</sub>, as recorded in Section A.III.3. The pound per hour emission limitations shall be used until better factors are developed from the stack testing requirements found in Section A.V.3;
  - e. The rolling, 12-month summation of VOC, NO<sub>x</sub>, CO, and PM/PM<sub>10</sub> emissions each, for emissions units P005 and P006, combined, in tons; and,
  - f. The rolling, 12-month summation of SO<sub>2</sub>, NO<sub>x</sub>, and PM/PM<sub>10</sub> emissions each, for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown events.
3. The permittee shall maintain daily records of the following information:
- a. The average hourly SO<sub>2</sub> emission rate for each carbon black product dried in this emissions unit, in pounds per hour, i.e., total potential uncontrolled sulfur dioxide emissions as recorded in Section A.III.i. in emissions unit P001 for each feedstock oil employed, multiplied by the constant 0.34\*;  
  
\* The constant applied above may change with future testing on the capture efficiency of this dryer and/or the emissions split between this emissions unit and/or P002 and its dryer. 34 % of the emissions from emissions unit P001 are vented to this dryer.
  - b. Total hours of operation for this emissions unit for each carbon black product dried;
  - c. The hourly SO<sub>2</sub> emission rate for emissions units P005 and P006, in pounds per hour, combined;
  - d. The daily SO<sub>2</sub> emissions for all carbon black products dried in this emissions unit, in pounds, i.e. summation of (a) multiplied by (b);
  - e. The rolling, 365-day SO<sub>2</sub> emission rate for all carbon black products dried, in tons;

- f.. The rolling , 365-day SO<sub>2</sub> emission rate for all carbon black products dried in emissions units P005 and P006, combined, in tons, i.e., the summation of values found in (c) for emissions units P005 and P006;
- g. The average daily CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011, and P012, in pounds per hour, calculated by multiplying the hourly emission rate as determined in Section A.V.1. b. and e. by the total hours of operation (b); and,
- h. The rolling, 365-day CO and VOC emission rate for emissions units P001, P002, P005, P006, P011, and P012, in tons, including emissions from start-up and shutdown events.

#### **IV. Reporting Requirements**

- 1. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
- 2. The permittee shall submit quarterly deviation (excursion) reports for emissions units P005 and P006, combined, that identify:
  - a. Each day during which the average hourly SO<sub>2</sub> emission rate exceeded 290.4 lbs/hr, and the actual average hourly SO<sub>2</sub> emissions for each such day;
  - b. Each day during which the rolling, 365-day SO<sub>2</sub> emission rate exceeded 1,271 tons, and the actual SO<sub>2</sub> emissions for each such 365-day period; and,
  - c. Each month during which the rolling, 12-month NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub> emission limitations listed in A.I.1 were exceeded.
- 3. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001, P002, P005, P006, P011, and P012, combined, that identify:
  - a. All exceedances of the rolling, 12-month production rate limitation;
  - b. Each day during which the rolling, 365-day SO<sub>2</sub> emissions rate exceeded 4,545 tons, and the actual SO<sub>2</sub> emissions for each such 365-day period; and,
  - c. Each day during which the rolling, 365-day CO and VOC emission rates exceeded 2,983 tons and 80.4 tons, respectively. The report shall also include the actual 365-day CO and VOC emission rates for each day a deviation occurred .

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Quarterly deviation reports shall be submitted as required in the General Terms and Conditions of this permit.

4. The permittee shall submit annual reports that include the following information:
  - a. The total hours of operation of this emissions unit;
  - b. The total carbon black production *rate* from emissions units P001, P002, P005, P006, P011, and P012, combined; and,
  - c. The emissions (including all calculations), in tons, from this emissions unit for the previous calendar year for each pollutant with an annual limitation in Section A.I.1.

These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 of each year.

## V. Testing Requirements

1. Compliance with the emission limitations in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 6.8 lbs/hr of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.2 and the emission testing procedures specified in section A.V.3.
  - b. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 299.8 lbs/hr of CO.

Applicable Compliance Method:

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Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.2 and the emission testing procedures specified in section A.V.3.

c. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 56.0 lbs/hr of NO<sub>x</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.2 and the emission testing procedures specified in section A.V.3.

d. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 290.4 lbs/hr of SO<sub>2</sub>.

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Emissions Unit ID: P005

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Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.3 and the emission testing procedures specified in section A.V.3.

e. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 19.5 lbs/hr of VOC.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.3 and the emission testing procedures specified in section A.V.3.

f. Emission Limitation:

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

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the methods and procedures specified in OAC rule 3745-17-03(B)(1).

g. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 1,272 tons of SO<sub>2</sub> per year based upon a rolling, 365-day summation of the SO<sub>2</sub> emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in section A.III.3.f.

h. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not

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exceed 29.8 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the PM/PM<sub>10</sub> emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Section A.III.2.e.

i. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 1313.7 tons of CO based upon a rolling, 12-month summation of the CO emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

j. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 219.0 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the NO<sub>x</sub> emissions.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

k. Emission Limitation:

Total emissions from emissions unit P005 and P006, combined, shall not exceed 85.4 tons of VOC based upon a rolling 12-month summation of the VOC emissions.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

l. Emission Limitation:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 12-month emissions

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summations:

4547.0 tons of SO<sub>2</sub>;  
508.0 tons of NO<sub>x</sub>; and,  
84.9 tons of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Section A.III.

m. Emission Limitation:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 365-day emission summations:

151.0 tons of VOC; and,  
2556.0 tons of CO.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping and requirements specified in Section A.III.

2. The permittee shall conduct, or have conducted, emission testing for emissions units P005 and P006, combined, in accordance with the following requirements:
  - a. Emission testing shall be conducted no later than 60 days after emissions units P002 and P006 reinstate operation. This requirement does not supercede any testing requirement contained in the permittee's Title V operating permit.
  - b. The emission testing shall be conducted while emissions units P005 and P006 are operating at or near their maximum capacities, unless otherwise specified or approved by Ohio EPA's Southeast District Office. Additional testing under multiple "worst-case" scenarios may be required for SO<sub>2</sub>.
  - c. The emission testing shall be conducted for emission units P005 and P006 to demonstrate compliance with the combined allowable emission limitations for CO, VOC, PM/PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>.

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- d. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

for PM/PM<sub>10</sub>, Methods 1 through 5 of 40 CFR Part 60, Appendix A or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202;

for SO<sub>2</sub>, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A;

for VOC, Methods 1 through 4 and Method 18,25, 25A, as appropriate, of 40 CFR Part 60, Appendix A;

for NO<sub>x</sub>, Methods 1 through 4 and Method 7 of 40 CFR Part 60, Appendix A; and,

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

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

- e. The test(s) shall be conducted while emissions units P005 and P006 and emissions units P001 and P002 are all operating simultaneously.
- f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA, Southeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), the person(s) who will be conducting the test(s), and the maximum feedstock oil feedrates to be used during the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA, Southeast District Office's refusal to accept the results of the emission test(s).

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

A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Southeast District Office.

**VI. Miscellaneous Requirements**

None

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Emissions Unit ID: P005

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**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.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> |
|---|--------------------------------------|--|
| P005 - Unit Number 1<br>Dryer                 | None                                 | None   |

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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Emissions Unit ID: P006

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**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.

| <u>Operations, Property, and/or Equipment</u>  | <u>Applicable Rules/Requirements</u>             |
|--|--|
| P006 - Unit Number 2 Dryer serving emissions unit P002.  | OAC rule 3745-31-05(A)(3)                        |
| (Administrative modification to PTI # 06-06770, issued on May 27, 2004 to increase feedstock oil sulfur content .) | OAC rules 3745-31-10 through 20                  |
|  | OAC rule 3745-31-05(C)<br>(To avoid PSD review.) |

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|                           | Applicable Emissions<br><u>Limitations/Control Measures</u>  | upon a rolling, 12-month summation<br>of the emissions:  |
|---------------------------|--|--|
| OAC rule 3745-17-07(A)    |  | 4547.0 tons of SO <sub>2</sub> ;<br>508.0 tons of NO <sub>x</sub> ; and,<br>84.9 tons of PM/PM <sub>10</sub> .   |
| OAC rule 3745-17-11(B)(1) | The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(C), and 40 CFR Part 52.21. | Total emissions from emission units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following, based upon a rolling 365-day summation of the emissions: |
| OAC rule 3745-18-06(E)(2) | Total emissions from emissions units P005 and P006 combined shall be limited to the following from the central stack:                              | 151.0 tons of VOC; and,<br>2556.0 tons of CO.  |
|                           | 4.0% sulfur content, 290.4 lbs/hr, and 1,272 tons of SO <sub>2</sub> based upon a 365-day rolling summation of the SO <sub>2</sub> emissions .     | Visible particulate emissions shall not exceed 20 % opacity, as a 6-minute average except as provided by rule.   |
|                           | 19.5 lb/hr and 85.4 tons of VOC based upon a rolling, 12-month summation of the VOC emissions.   | The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).                               |
|                           | 56.0 lbs/hr and 219.0 tons of NO <sub>x</sub> based upon a rolling, 12-month summation of the NO <sub>x</sub> emissions.                           | The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).                               |
|                           | 299.8 lb/hr and 1313.7 tons of CO based upon a rolling, 12-month summation of the CO emissions.  |  |
|                           | 6.8 lbs/hr and 29.8 tons of PM/PM <sub>10</sub> based upon a rolling, 12-month summation of the PM/PM <sub>10</sub> emissions.                     |  |
|                           | See Section A.I.2.a below.   |  |
|                           | Total emissions from emission units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following, based                        |  |

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**2. Additional Terms and Conditions**

- 2.a** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

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- 2.b** Emissions of sulfur dioxide shall be monitored utilizing the Sulfur Management System (SMS), as submitted by the permittee in September 2001, and incorporated in the operational, monitoring, recordkeeping and reporting requirements of this permit. The SMS relies upon the monitoring of feedstock sulfur content, feedstock oil feedrate, and retention of sulfur in the product to demonstrate ongoing compliance with SO<sub>2</sub> emissions limitations. Equations detailing the relationship between these parameters can be found in Section A.III of the terms and conditions for emissions unit P002.

**II. Operational Restrictions**

1. The pressure drop across the baghouse shall be maintained within the range of 2 to 7 inches of water, while the emissions unit is in operation.
2. Maximum annual production of carbon black for emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed 223,000,000 pounds on a rolling, 12-month summation of the carbon black production rates (this limitation shall adjust downward as a result of any increases in feedstock sulfur content, per SMS term A.I.2.c.). This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, thereby eliminating the need to establish the first year's cumulative rolling, 12-month summation of carbon black production. The existing, previous 12-month record of the 223,000,000 pounds of carbon black production shall be maintained as the rolling monthly record, upon the issuance of this permit.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall properly operate and maintain equipment to monitor the pressure drop across the baghouse while the emissions unit is in operation. The monitoring equipment shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s). The permittee shall record the pressure drop across the baghouse on a daily basis.
2. The permittee shall maintain monthly records of the following information:
  - a. the production rate for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/month);
  - b. the rolling, 12-month summation of the production rates for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling 12-months);

- c. the total hours of operation of this emissions unit;
  - d. the total emissions of SO<sub>2</sub>, NO<sub>x</sub>, CO, VOC, and PM/PM<sub>10</sub> calculated by multiplying the hours of operation during the month (c) for both emissions units P005 and P006, by the pound per hour emissions for each pollutant, as determined in the most recent emission test results and for SO<sub>2</sub>, as recorded in Section A.III.3. The pound per hour emission limitations shall be used until better factors are developed from the stack testing requirements found in Section A.V.3;
  - e. the rolling, 12-month summation of VOC, NO<sub>x</sub>, CO, and PM/PM<sub>10</sub> emissions each, for emissions units P005 and P006, combined, in tons; and
  - f. the rolling, 12-month summation of SO<sub>2</sub>, NO<sub>x</sub>, and PM/PM<sub>10</sub> each, for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown events.
3. The permittee shall maintain daily records of the following information:
- a. the average hourly SO<sub>2</sub> emission rate for each carbon black product dried in this emissions unit, in pounds per hour, i.e., the total potential uncontrolled sulfur dioxide emissions as recorded in Section A.III.i. in emissions unit P002 for each feedstock oil employed, multiplied by the constant 0.34\*;
- \*The constant applied above may change with future testing on the capture efficiency of this dryer and/or the emissions split between this emissions unit and/or P001 and its dryer. 34 % of the emissions from emissions unit P002 are vented to this dryer .
- b. the total hours of operation for this emission unit for each carbon black product dried;
  - c. the hourly SO<sub>2</sub> emission rate for emissions units P005 and P006, in pounds per hour, combined;
  - d. the daily SO<sub>2</sub> emissions for all carbon black products dried in this emissions unit, in pounds, i.e. summation of (a) multiplied by (b);
  - e. the rolling, 365-day SO<sub>2</sub> emission rate for all carbon black products dried, in tons;
  - f. the rolling, 365 day SO<sub>2</sub> emission rate for all carbon black products dried in emissions units P005 and P006, combined, in tons. i.e., the summation of the values found in (c) for emissions units P005 and P006;

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- g. the average daily CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011, and P012, in pounds per hour, calculated by multiplying the hourly emission rate as determined in Section A.V.1. b. and e. by the total hours of operation (b); and,
- h. the rolling, 365-day CO and VOC emission rate for emissions units P001, P002, P005, P006, P011, and P012, in tons, including emissions from start-up and shutdown.

#### **IV. Reporting Requirements**

1. The permittee shall submit quarterly pressure drop deviation (excursion) reports that identify all periods of time during which the pressure drop across the baghouse did not comply with the allowable range specified above.
2. The permittee shall submit quarterly deviation (excursion) reports for emissions units P005 and P006, combined, that identify:
  - a. each day during which the average hourly SO<sub>2</sub> emission rate exceeded 290.4 lbs/hr, and the actual average hourly SO<sub>2</sub> emissions for each such day;
  - b. each day during which the rolling, 365-day SO<sub>2</sub> emission rate exceeded 1,271 tons, and the actual SO<sub>2</sub> emissions for each such 365-day period; and,
  - c. each month during which the rolling, 12-month NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub> emission limitations listed in A.I.1 were exceeded.
3. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001, P002, P005, P006, P011, and P012, combined, that identify:
  - a. all exceedances of the rolling, 12-month production rate limitation;
  - b. each day during which the rolling, 365-day SO<sub>2</sub> emissions rate exceeded 4,545 tons, and the actual SO<sub>2</sub> emissions for each such 365 day period; and,
  - c. each day during which the rolling, 365-day CO and VOC emission rates

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exceeded 2,983 tons and 80.4 tons, respectively. The report shall also include the actual 365-day CO and VOC emission rate for each day a deviation occurred .

Quarterly deviation reports shall be submitted as required in the General Terms and Conditions of this permit.

4. The permittee shall submit annual reports that include the following information:
  - a. the total hours of operation of this emissions unit;
  - b. the total carbon black production rate from emissions units P001, P002, P005, P006, P011, and P012, combined; and,
  - c. the emissions (including all calculations), in tons, from this emissions unit for the previous calendar year for each pollutant with an annual limitations in Section A.I.1.

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These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 of each year.

**V. Testing Requirements**

1. Compliance with the emission limitations in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 6.8 lbs/hr of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.2 and the emission testing procedures specified in section A.V.3.

- b. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 299.8 lbs/hr of CO.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.2 and the emission testing procedures specified in section A.V.3.

- c. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 56.0 lbs/hr of NO<sub>x</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.2 and the emission testing procedures specified in section A.V.3.

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**Issued: To be entered upon final issuance**d. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 290.4 lbs/hr of SO<sub>2</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.3 and the emission testing procedures specified in section A.V.3.

e. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 19.5 lbs/hr of VOC.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.3 and the emission testing procedures specified in section A.V.3.

f. Emission Limitation:

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

Applicable Compliance Method:

Compliance shall be demonstrated in accordance with the requirements specified in 40 CFR Part 60, Appendix A, Method 9 and the methods and procedures specified in OAC rule 3745-17-03(B)(1).

g. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 1,272 tons of SO<sub>2</sub> per year based upon a rolling, 365-day summation of the SO<sub>2</sub> emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements

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specified in section A.III.3.f.

h. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 29.8 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the PM/PM<sub>10</sub> emissions.

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Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

i. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 1313.7 tons of CO based upon a rolling, 12-month summation of the CO emissions.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

j. Emission Limitation:

Total emissions from emissions units P005 and P006, combined, shall not exceed 219.0 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the NO<sub>x</sub> emissions.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

k. Emission Limitation:

Total emissions from emissions unit P005 and P006, combined, shall not exceed 85.4 tons of VOC based upon a rolling 12-month summation of the VOC emissions.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.2.e.

l. Emission Limitation:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 365-day emission summations:

151.0 tons of VOC; and,  
2556.0 tons of CO.

Applicable Compliance Method:

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Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Section A.III.

m. Emission Limitation

Annual emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 12-month emission summations:

4547.0 tons of SO<sub>2</sub>;  
508.0 tons of NO<sub>x</sub>; and,  
84.9 tons of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Section A.III.

2. The permittee shall conduct, or have conducted, emission testing for emissions units P005 and P006, combined, in accordance with the following requirements:
- a. Emission testing shall be conducted no later than 60 days after emissions unit P002 and P006 reinitiate operation.
  - b. The emission testing shall be conducted while emissions units P005 and P006 are operating at or near their maximum capacities, unless otherwise specified or approved by Ohio EPA's Southeast District Office. Additional testing under multiple "worst-case" scenarios may be required for SO<sub>2</sub>.
  - c.. The emission testing shall be conducted for emissions units P005 and P006 to demonstrate compliance with the combined allowable emission limitations for CO, VOC, PM/PM<sub>10</sub>, SO<sub>2</sub>, and NO<sub>x</sub>.
  - d. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:  
  
for PM/PM<sub>10</sub> , Methods 1 through 5 of 40 CFR Part 60, Appendix A or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202;  
for SO<sub>2</sub>, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A;  
for VOC, Methods 1 through 4 and Method 18,25, 25A, as appropriate, of 40

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CFR Part 60, Appendix A;  
for NO<sub>x</sub>, Methods 1 through 4 and Method 7 of 40 CFR Part 60, Appendix A;  
and,  
for CO, Methods 1 through 4 and Method 10 of 40 CFR Part 60, Appendix A.

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

- e. The test(s) shall be conducted while emissions units P005 and P006 and emissions units P001 and P002 are all operating simultaneously.

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

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

A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA, Southeast District Office within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, Southeast District Office.

**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.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> |
|---|--------------------------------------|--|
| P006 - Unit Number 2<br>Dryer                 | None                                 | None   |

**2. Additional Terms and Conditions**

- 2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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Emissions Unit ID: P011

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**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.

| <u>Operations, Property, and/or Equipment</u>   | <u>Applicable Rules/Requirements</u>   |
|---|--|
| P011 - Carbon Black Unit Number 3<br><br>(Administrative modification to PTI # 06-06770, issued on May 27, 2004 to increase feedstock oil sulfur content .) | OAC rule 3745-31-05(A)(3)<br><br>OAC rules 3745-31-10 through 20<br><br>OAC rule 3745-31-05(C)<br>(To avoid PSD review.) |

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|                           | <u>Applicable Emissions Limitations/Control Measures</u>   | PM/PM <sub>10</sub> emissions.   |
|---------------------------|--|--|
| OAC rule 3745-17-07(A)    | The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(C), and 40 CFR Part 52.21.   | See Section A.I.2.b and A.I.2.c below.   |
| OAC rule 3745-17-11(B)(1) | See Section A.I.2.a below.   | Total emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following based upon a rolling, 12-month summation of the emissions:   |
| OAC rule 3745-18-06(E)(2) | Total emissions from emissions units P011 and P012, combined, shall be limited to the following, except during periods of start-up and shutdown, from the thermal oxidizer:<br><br>4.0% sulfur content, 337.3 lbs/hr and 1,477.4 tons of SO <sub>2</sub> based upon a rolling, 365-day summation of the SO <sub>2</sub> emissions.<br><br>37.0 lbs/hr and 162.1 tons of NO <sub>x</sub> based upon a rolling, 12-month summation of the NO <sub>x</sub> emissions. | 4547.0 tons of SO <sub>2</sub> ;<br>508.0 tons of NO <sub>x</sub> ; and,<br>84.9 tons of PM/PM <sub>10</sub> .<br><br>Total emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following based upon a rolling, 365-day summation of the emissions:<br><br>151.0 tons of VOC; and,<br>2556.0 tons of CO. |
|                           | 10.0 lbs/hr and 43.8 tons of VOC based upon a rolling, 12-month summation of the VOC emissions.  | Visible particulate emissions shall not exceed 20% opacity, as a 6-minute average except as provided by rule.  |
|                           | 10.0 lbs/hr and 43.8 tons of CO based upon a rolling, 12-month summation of the CO emissions.  | The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).   |
|                           | 9.17 lbs/hr and 36.3 tons of PM/PM <sub>10</sub> based upon a rolling, 12-month summation of the   | The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).   |

**2. Additional Terms and Conditions**

- 2.a** This emissions unit shall be limited to the following emissions during start-up and shutdown (vent emissions):

2.0 lbs/hr and 0.1 tons/yr of SO<sub>2</sub>;  
110 lbs/hr and 4.6 tons/yr of VOC;  
4,112 lbs/hr and 172 tons/yr of CO;  
2.4 lbs/hr and 0.1 tons/yr of NO<sub>x</sub>;  
2.3 lbs/hr and 0.1 tons/yr of PM/PM<sub>10</sub>;  
44.5 lbs/hr and 1.9 tons/yr of H<sub>2</sub>S;  
8.7 lbs/hr and 0.4 tons/yr of COS;  
20.1 lbs/hr and 0.9 tons/yr of CS<sub>2</sub>; and,  
10.7 lbs/hr and 0.5 tons/yr of HCN.

- 2.b** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

- 2.c** Emissions of sulfur dioxide shall be monitored utilizing the Sulfur Management System (SMS), as submitted by the permittee in September 2001, and incorporated in the operational, monitoring, recordkeeping and reporting requirements of this permit. The SMS relies upon the monitoring of feedstock sulfur content, feedstock oil feedrate, and retention of sulfur in the product to demonstrate ongoing compliance with SO<sub>2</sub> emission limitaitons. Equations detailing the relationship between these parameters can be found in Section A.III.10.

**II. Operational Restrictions**

1. This emissions unit shall:
  - a. utilize feedstock oil which contains no more than 4% sulfur;
  - b. be equipped with a product exhaust bag filter with a design efficiency not less than 99.7%; and
  - c. employ a thermal incinerator with a destruction efficiency of 95% for particulate emissions and 98% for VOC and CO.
2. This emissions unit shall be limited to 84 hours per year for all start-up and shutdown operations.
3. The average combustion temperature within the thermal incinerator, 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

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test that demonstrated the emissions unit was in compliance.

4. If the mass flow rate meter employed to continuously monitor the feedstock oil feed rate is not in operation, the production of carbon black shall be automatically terminated.
5. Maximum annual production of carbon black for emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed 223,000,000 pounds as a rolling 12-month summation of the carbon black production rates (this limitation shall adjust downward as a result of any increases in feedstock sulfur content, per SMS term A.I.2.c.). This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, thereby eliminating the need to establish the first year's cumulative rolling, 12-month summation of carbon black production. The existing, previous 12-month record of the 223,000,000 pounds of carbon black shall be maintained as the rolling monthly record, upon the issuance of this permit.

**III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform daily checks, while the equipment is in operation and when the weather conditions allow, for any visible particulate emissions from the stack of this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log.
  - a. the location and color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the visible emissions;
  - d. the total duration of any visible emission incident; and,
  - e. any corrective actions taken to eliminate the visible emissions.
2. The permittee shall keep daily records for all start-up and shutdown periods that contain the following information:
  - a. the date of each start-up and/or shutdown;
  - b. the time period during which each start-up or shutdown occurred;

- c. the year-to-date, total hours of all start-up and shutdown periods.; and,
    - d. At the end of each year, the permittee shall add and maintain a record of the total hours and total emissions from start-up/shutdown events, from the records maintained as required above.
  3. The permittee shall maintain records of the feedstock oil for this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.
    - a. Alternative 1:

For each shipment of feedstock oil received for this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of the feedstock oil and maintain records of the total quantity of feedstock oil received, and the permittee's or oil supplier's analyses for sulfur content and density.
    - b. Alternative 2:

The permittee shall collect a representative grab sample of the feedstock oil for this emissions unit for each day when the emissions unit is in operation. If additional feedstock oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to create a composite sample that is representative of the average quality of feedstock oil used in this emissions unit. The permittee shall maintain records of the total quantity of feedstock oil used each day, and the permittee's analyses for sulfur content and density.
  4. The permittee shall measure the sulfur content (in weight %) of the feedstock oil in accordance with the procedures specified in ASTM standard D4294, "Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-ray Fluorescence Spectrometry". In addition, the permittee shall measure the density (in pounds per gallon) of the feedstock oil in accordance with the procedures specified in ASTM standard D287, "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)".
  5. For each day of operation of this emissions unit, the permittee shall collect a sufficient number of grab samples of carbon black product to create a composite sample that is representative of the average quality of the carbon black produced in this emissions unit. The permittee shall measure and maintain a record of the sulfur content ( in weight %) of each composite sample of carbon black product in accordance with the procedures specified in ASTM standard D1619, "Standard Test Method for Carbon Black- Sulfur Content".
  6. The permittee shall operate and maintain a continuous temperature monitor and

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recorder which measures and records the combustion temperature within the thermal incinerator when this emissions unit 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 incinerator, when this 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; 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.
7. The permittee shall properly operate and maintain a Micro Motion mass flow rate meter, model number D100, or equivalent monitor, to continuously monitor the feedstock oil feed rate when the emissions unit is in operation and producing carbon black. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

The permittee shall record the following information each day:

- a. all periods during which the Micro Motion mass flow rate meter, model number D100, or equivalent monitor, was not in operation while the emissions unit was in operation;
  - b. all downtimes for the monitoring equipment and the associated emissions unit; and,
  - c. the corrective actions taken to reestablish correct operation of the mass flow rate meter.
8. The permittee shall maintain monthly records of the following information:
- a. the carbon black production rate, in pounds per month, for this emissions unit;

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- b. the production rate for emissions units P001, P002, P005, P006, P011 and P012 (tons carbon black/month);
  - c. the rolling, 12-month summation of the production rates for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling, 12-month period);
  - d. the total hours of operation of this emissions unit;
  - e. the total emissions of SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub>, calculated by multiplying the hourly rate as determined in Section A.V. by the hours of operation (d);
  - f. the rolling, 12-month summation of NO<sub>x</sub>, VOC, CO and PM/PM<sub>10</sub> emissions each, for emissions units P011 and P012, combined, in tons; and,
  - g. the rolling, 12-month summation of SO<sub>2</sub>, NO<sub>x</sub>, and PM/PM<sub>10</sub> emissions each, for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown events.
9. The permittee shall maintain daily records of the following information for this emissions unit:
- a. the OEPA identification number of this emissions unit;
  - b. the current day, month, and year;
  - c. the grade of each feedstock oil processed (% sulfur);
  - d. the yield of each feedstock oil, (defined as the average amount of carbon black produced in pounds, per gallon of feedstock oil used during the day (lbs carbon black/ gallons of feedstock oil));
  - e. the sulfur content of each feedstock oil, in weight percent;
  - f. the sulfur content of the carbon black product, in weight percent;
  - g. the feedstock oil feed rate, in gallons per hour for each hour of operation, continuously monitored using a Micro Motion mass flow rate meter, model number D100 or an equivalent monitor;
  - h. the feedstock oil density, in pounds per gallon (from A.III.4)
  - i. the carbon black production rate, in pounds per hour for each hour of operation, [(d) multiplied by (g)];

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- j. the average hourly sulfur dioxide emission rate for each feedstock oil, in pounds per hour, calculated as specified in Section A.III.10;
  - k. the total hours of operation for each feedstock oil;
  - l. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (j) x (k) for all of the feedstock oils);
  - m. the rolling, 365-day SO<sub>2</sub> emission rate for all feedstock oils, in tons;
  - n. the daily CO and VOC emission rate for each feedstock oil used in emissions units P011 and P012, in pounds per day, calculated by multiplying the hourly emission rate as determined in Section A.V.b. and d. by the hours of operation (j); and,
  - o. the rolling, 365-day CO and VOC emission rates for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = [(FSR \times SFSP) - (CBPR \times SCBP)] \times 64/32$$

where:

E = sulfur dioxide emission rate, in pounds per hour;

FSR = maximum recorded feedstock oil feed rate, in pounds per hour (from A.III.9. g. and h.);

SFSP = feedstock oil sulfur content, in weight percent (from A.III.4);

CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.i);

SCBP = carbon black sulfur content, in weight percent (from A.III.5); and,

64/32 = constant to convert molecular weight rate of sulfur to molecular weight of sulfur dioxide.

NOTE: The permittee conservatively assumes all of the sulfur emissions are emitted as sulfur dioxide emissions.

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1. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the Micro Motion mass flow rate meter, model number D100 or equivalent flow meter, was not functioning properly. The reports shall include the date, time, and duration of each such period, and the corrective action(s) to ensure correct operation.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the sulfur content limitation. The reports shall include the date, time, and duration of each such period when the sulfur content of the oil used in this emissions unit is greater than 4percent, and the corrective action to bring the sulfur content below 4 percent.
4. The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the annual start-up and shutdown emission limitations as listed in Section A.II.2.
5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Ohio EPA, Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
6. The permittee shall submit quarterly deviation (excursion) reports for emissions units P011 and P012, combined, that identify:
  - a. each day during which the average hourly SO<sub>2</sub> emission rate exceeded 337.3 lbs/hr, and the actual average hourly SO<sub>2</sub> emissions for each such day;
  - b. each day during which the SO<sub>2</sub> emission limitation exceeded 1,477.4 tons, and the actual SO<sub>2</sub> emissions for each such day; and,
  - c. each month during which the rolling, 12-month NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub>

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emission limitations were exceeded, and the actual emissions for that month.

7. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001, P002, P005, P006, P011, and P012, combined, that identify:
  - a. all exceedances of the rolling, 12-month production rate limitation of 223,000,000 pounds of carbon black;
  - b. each day during which the rolling, 12-month emissions rates exceeded the rolling, 12-month emissions limitations listed in A.I.1.; and,
  - c. each day during which the rolling, 365-day CO and VOC emission rates exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual CO and VOC emission limitations for each day a deviation occurred.

Quarterly deviation reports shall be submitted as required in the General Terms and Conditions of this permit.

8. The permittee shall submit annual reports that include the following information:
  - a. the total hours of start-up and shutdown operations for this emissions unit for the previous calendar year, and the emissions calculated from start-up and shutdown events, calculated and recorded as required in Section A.III.2;
  - b. the total hours of operation of this emissions unit;
  - c. the total production from emissions units P001, P002, P005, P006, P011, and P012, combined; and
  - d. the total SO<sub>2</sub> emissions (including all calculations), in tons, from emission units P001, P002, P005, P006, P011, and P012, combined, for the previous calendar year.

These reports shall be submitted to the Director (Ohio EPA Southeast District Office) by January 31 of each year.

## **V. Testing Requirements**

1. Compliance with the emission limitations in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:
  - a. Emission Limitation:

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Emissions units P011 and P012, combined, shall be limited to 9.17 lbs/hr of PM/PM<sub>10</sub> during normal operation from the thermal oxidizer:

Applicable Compliance Method:

If required, compliance shall be demonstrated by testing as specified in Section A.V.3 based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202 .

b. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 10.0 lbs/hr of VOC during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance may be demonstrated based upon the monitoring and recordkeeping maintained in Section A.III.8 and performance of the following:

$$E = (VEF * GOB) * (1 - 0.98)$$

Where

E = VOC emission rate from emissions units P011 and P012, combined, in pounds per hour.

VEF is the VOC emission factor per 1,000 gallons of oil burned, 200 lbs VOC/1,000 gal oil burned, submitted by the permittee and based upon their best engineering judgement and knowledge of the process.

GOB is the total gallons of oil burned per hour from emissions units P011 and P012 combined.

(1 - 0.98) 98% is the required minimum destruction efficiency of the thermal incinerator for VOCs, which may be adjusted for emission records and reporting, if testing demonstrates a more accurate control efficiency.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 18,25, 25A, as appropriate, as set forth in "Appendix on Test Methods" in 40

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CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

c. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 37.0 lbs/hr of NO<sub>x</sub> during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping maintained in Section A.III.8 and performance of the following equation:

$$E = NEF * PPPH$$

where

E = NO<sub>x</sub> emission rate from emissions units P011 and P012, combined, in pounds per hour.

NEF is the NO<sub>x</sub> emission factor per 1,000 gallons of oil burned, 2.14 lbs NO<sub>x</sub>/1,000 lbs product, submitted by the permittee based upon their best engineering judgement and knowledge of the process.

PPPH is the pounds of product produced per hour from emissions units P011 and P012, combined.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 7 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

d. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 10.0 lbs/hr of CO during normal operation from the thermal oxidizer:

Applicable Compliance Method:

If required, compliance shall be demonstrated by testing as specified in Section A.V.3 based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 10 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

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**Issued: To be entered upon final issuance**e. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 337.3 lbs/hr of SO<sub>2</sub> during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be demonstrated by testing as specified in Section A.V.3, based upon the monitoring and recordkeeping requirements specified in sections A.III.9; and the emission calculation as specified in Section A.III.10.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 6 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002 .

f. Emission Limitation:

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

Applicable Compliance Method:

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

g. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 1,477.4 tons based upon a rolling, 365-day summation of SO<sub>2</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.9.I.

h. Emission Limitation:

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Emissions units P011 and P012, combined, shall be limited to 43.8 tons of CO based upon a rolling, 12-month summation of the emissions during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

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**Issued: To be entered upon final issuance**i. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 162.1 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the emissions during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

j. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 36.3 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

k. Emission Limitation:

Emissions from emissions units P011 and P012, combined, shall be limited to 43.8 tons of VOC per year based upon a rolling, 12-month summation of the emissions during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

l. Emission Limitations:

Emissions from emission units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as a rolling, 12-month emissions summation:

4547.0 tons of SO<sub>2</sub>;  
508.0 tons of NO<sub>x</sub>; and,

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Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.

m. Emission Limitations:

Emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed the following as a rolling, 365-day emission summations:

151.0 tons of VOC; and,  
2556.0 tons of CO.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.

2. The hourly limitations for start-up and shutdown operations in section A.I.2.a are the uncontrolled emission rates determined by the known chemical reaction of the process and represent the potentials to emit for this emissions unit; therefore, compliance with the hourly emission limitations is assumed. Compliance with the annual start-up and shutdown emission limitation(s) in Section A.I.2.a. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:0.1 ton per year of SO<sub>2</sub> during start-up/shutdown

## Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 2.0 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

b. Emission Limitation:

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4.6 tons per year of VOC during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 110 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

c. Emission Limitation:

172 tons per year of CO during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 4,112 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

d. Emission Limitation:0.1 ton per year of NO<sub>x</sub> during start-up/shutdownApplicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 2.4 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

e. Emission Limitation:

0.1 ton per year of particulate emissions during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 2.3 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

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f. Emission Limitation:1.9 tons per year of H<sub>2</sub>S during start-up/shutdownApplicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 44.5 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

g. Emission Limitation:

0.4 ton per year of COS during start-up/shutdown

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Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 8.7 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

h. Emission Limitation:0.9 ton per year of CS<sub>2</sub> during start-up/shutdownApplicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 20.1 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

i. Emission Limitation:

0.5 ton per year of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 10.7 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

3. 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 while emissions units P011 and P012 are operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA's Southeast District Office. Additional testing under multiple "worst-case" scenarios may be required for SO<sub>2</sub>.
  - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for PM/PM<sub>10</sub>, SO<sub>2</sub>, VOC, and CO.
  - c. The following test methods shall be employed to demonstrate compliance with

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the allowable mass emission rates:

for PM/PM<sub>10</sub>, Methods 1 through 5 of 40 CFR Part 60, Appendix A or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202;

for SO<sub>2</sub>, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A; and

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

for VOC, Methods 1 through 4 and Method 18, 25, 25A, as appropriate, of 40CFR Part 60, Appendix A; and,

for NO<sub>x</sub>, Methods 1 through 4 and Method 7 of 40 CFR Part 60, Appendix A.

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

- d. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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), the person(s) who will be conducting the test(s), and the maximum feedstock oil feedrate to be used during the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency 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 appropriate Ohio EPA District Office or local air agency.

## **VI. Miscellaneous Requirements**

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None.

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**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.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> |
|---|--------------------------------------|--|
| P011 - Carbon Black Unit Number 3             | OAC rule 3745-31-05                  | None   |

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

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**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.

| <u>Operations, Property, and/or Equipment</u>  | <u>Applicable Rules/Requirements</u> |  |
|--|--------------------------------------|--|
| P012 - Carbon Black Unit Number 4<br><br>(Administrative modification to PTI # 06-06770, issued on May 27, 2004 to increase feedstock oil sulfur content.) | OAC rule 3745-31-05(A)(3)            | OAC rule 3745-31-05(C)<br>(To avoid PSD review.) |
|  | OAC rules 3745-31-10 through 20      |  |
|  |                                      | OAC rule 3745-17-07(A)                           |

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|                                      | <p style="text-align: center;"><u>Applicable Emissions<br/>Limitations/Control Measures</u></p>  | <p>PM/PM<sub>10</sub> emissions.</p>  |
|--------------------------------------|--|---|
| <p>OAC rule<br/>3745-17-11(B)(1)</p> | <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(C), and 40 CFR Part 52.21.</p>  | <p>See Sections A.I.2.b and A.I.2.c below.</p> <p>Total emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following based upon a rolling, 12-month summation of the emissions:</p>  |
| <p>OAC rule<br/>3745-18-06(E)(2)</p> | <p>See Section A.I.2.a below.</p> <p>Total emissions from emissions units P011 and P012 combined shall be limited to the following, except during periods of start-up and shutdown, from the thermal oxidizer:</p> | <p>4547.0 tons of SO<sub>2</sub>;<br/>508.0 tons of NO<sub>x</sub>; and,<br/>84.9 tons of PM/PM<sub>10</sub></p> <p>Total emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following based upon a rolling, 365-day summation of the emissions:</p> |
|                                      | <p>4.0% sulfur content, 337.3 lbs/hr and 1,477.4 tons/yr of SO<sub>2</sub> based upon a rolling, 365-day summation of the SO<sub>2</sub> emissions.</p>  | <p>151.0 tons of VOC; and,<br/>2556.0 tons of CO.</p>   |
|                                      | <p>37.0 lbs/hr and 162.1 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the NO<sub>x</sub> emissions.</p>  | <p>Visible particulate emissions shall not exceed 20% opacity, as a 6 -minute average except as provided by rule.</p>   |
|                                      | <p>10.0 lbs/hr and 43.8 tons of VOC based upon a rolling, 12-month summation of the VOC emissions.</p>   | <p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>   |
|                                      | <p>10.0 lbs/hr and 43.8 tons of CO based upon a rolling, 12-month summation of the CO emissions.</p>   | <p>The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).</p>   |
|                                      | <p>9.17 lbs/hr and 36.3 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the</p>   |   |

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- 2.a** This emissions unit shall be limited to the following emissions during start-up and shutdown (vent emissions):
- 2.0 lbs/hr and 0.1 tons/yr of SO<sub>2</sub>;
  - 110 lbs/hr and 4.6 tons/yr of VOC;
  - 4,112 lbs/hr and 172 tons/yr of CO;
  - 2.4 lbs/hr and 0.1 tons/yr of NO<sub>x</sub>;
  - 2.3 lbs/hr and 0.1 tons/yr of PM/PM<sub>10</sub>;
  - 44.5 lbs/hr and 1.9 tons/yr of H<sub>2</sub>S;
  - 8.7 lbs/hr and 0.4 tons/yr of COS;
  - 20.1 lbs/hr and 0.9 tons/yr of CS<sub>2</sub>; and,
  - 10.7 lbs/hr and 0.5 tons/yr of HCN.
- 2.b** The permittee shall employ good combustion practices to minimize emissions to the extent possible.
- 2.c** Emissions of sulfur dioxide shall be monitored utilizing the Sulfur Management System (SMS), as submitted by the permittee in September 2001, and incorporated in the operational, monitoring, recordkeeping and reporting requirements of this permit. The SMS relies upon the monitoring of feedstock sulfur content, feedstock oil feedrate, and retention of sulfur in the product to demonstrate ongoing compliance with SO<sub>2</sub> emission limitations. Equations detailing the relationship between these parameters can be found in Section A.III.10.

**II. Operational Restrictions**

1. This emissions unit shall
  - a. utilize feedstock oil which contains no more than 4% sulfur;
  - b. be equipped with a product exhaust bag filter with a design efficiency not less than 99.7%; and
  - c. employ a thermal incinerator with a destruction efficiency of 95% for particulate emissions and 98% for VOC and CO.
2. This emissions unit shall be limited to 84 hours per year for all start-up and shutdown operations.

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3. The average combustion temperature within the thermal incinerator, 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.
4. If the mass flow rate meter employed to continuously monitor the feedstock oil feed rate is not in operation, the production of carbon black shall be automatically terminated.
5. Maximum annual production of carbon black for emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed 223,000,000 pounds as a rolling, 12-month summation of the carbon black production rates (this limitation shall adjust downward as a result of any increases in feedstock sulfur content, per SMS term A.I.2.c.). This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, thereby eliminating the need to establish the first year's cumulative rolling, 12-month summation of carbon black production. The existing, previous 12-month record of the 223,000,000 pounds of carbon black shall be maintained as the rolling monthly record, upon the issuance of this permit.

### **III. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall perform daily checks, while the equipment is in operation and when the weather conditions allow, for any visible particulate emissions from the stack of this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log.
  - a. the location and color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the visible emissions;
  - d. the total duration of any visible emission incident; and,
  - e. any corrective actions taken to eliminate the visible emissions.
2. The permittee shall keep daily records for all start-up and shutdown periods that contain the following information:
  - a. the date of each start-up and/or shutdown;
  - b. the time period during which each start-up or shutdown occurred;

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- c. the year-to-date, total hours of all start-up and shutdown periods.; and,
- d. At the end of each year, the permittee shall add and maintain a record of the total hours and total emissions from start-up/shutdown events, from the records maintained as required above.

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3. The permittee shall maintain records of the feedstock oil for this emissions unit in accordance with either Alternative 1 or Alternative 2 described below.

- a. Alternative 1:

For each shipment of feedstock oil received for this emissions unit, the permittee shall collect or require the oil supplier to collect a representative grab sample of the feedstock oil and maintain records of the total quantity of feedstock oil received, and the permittee's or oil supplier's analyses for sulfur content and density.

- b. Alternative 2:

The permittee shall collect a representative grab sample of the feedstock oil for this emissions unit for each day when the emissions unit is in operation. If additional feedstock oil is added to the tank serving this emissions unit on a day when the emissions unit is in operation, the permittee shall collect a sufficient number of grab samples to create a composite sample that is representative of the average quality of feedstock oil used in this emissions unit. The permittee shall maintain records of the total quantity of feedstock oil used each day, and the permittee's analyses for sulfur content and density.

4. The permittee shall measure the sulfur content (in weight %) of the feedstock oil in accordance with the procedures specified in ASTM standard D4294, "Standard Test Method for Sulfur in Petroleum and Petroleum Products by Energy-Dispersive X-ray Fluorescence Spectrometry". In addition, the permittee shall measure the density (in pounds per gallon) of the feedstock oil in accordance with the procedures specified in ASTM standard D287, "Standard Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer Method)".
5. For each day of operation of this emissions unit, the permittee shall collect a sufficient number of grab samples of carbon black product to create a composite sample that is representative of the average quality of the carbon black produced in this emissions unit. The permittee shall measure and maintain a record of the sulfur content (in weight %) of each composite sample of carbon black product in accordance with the procedures specified in ASTM standard D1619, "Standard Test Method for Carbon Black- Sulfur Content".
6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when this emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately

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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 incinerator, when this 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; 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.

7. The permittee shall properly operate and maintain a Micro Motion mass flow rate meter, model number D100, or equivalent monitor, to continuously monitor the feedstock oil feed rate when the emissions unit is in operation and producing carbon black. The monitoring device and any recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manuals.

The permittee shall record the following information each day:

- a. all periods during which the Micro Motion mass flow rate meter, model number D100, or equivalent monitor, was not in operation while the emissions unit was in operation;
- b. all downtimes for the monitoring equipment and the associated emissions unit; and,
- c. the corrective actions taken to reestablish correct operation of the mass flow rate meter.

8. The permittee shall maintain monthly records of the following information:

- a. the carbon black production rate, in pounds per month, for this emissions unit;
- b. the production rate for emissions units P001, P002, P005, P006, P011, and P012 (tons carbon black/month);
- c. the rolling, 12-month summation of the production rates for emissions units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling,

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- 12-month period); and,
- d. the total hours of operation of this emissions unit;
  - e. the total emissions of SO<sub>2</sub>, NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub>, calculated by multiplying the hourly rate as determined in Section A.V. by the hours of operation (d);
  - f. the rolling, 12-month summation of NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub> emissions each, for P011 and P012, combined, in tons; and,
  - g. the rolling, 12-month summation of SO<sub>2</sub>, NO<sub>x</sub>, and PM/PM<sub>10</sub> emissions each, for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown events.
9. The permittee shall maintain daily records of the following information for this emissions unit:
- a. the OEPA identification number of this emissions unit;
  - b. the current day, month, and year;
  - c. the grade of each feedstock oil processed (% sulfur);
  - d. the yield of each feedstock oil, (defined as the average amount of carbon black produced in pounds, per gallon of feedstock oil used during the day (lbs carbon black/gallons of feedstock oil);
  - e. the sulfur content of each feedstock oil, in weight percent;
  - f. the sulfur content of the carbon black product, in weight percent;
  - g. the feedstock oil feed rate, in gallons per hour for each hour of operation, continuously monitored using a Micro Motion mass flow rate meter, model number D100 or an equivalent monitor;
  - h. the feedstock oil density, in pounds per gallon (from A.III.4);
  - i.. the carbon black production rate, in pounds per hour for each hour of operation, [(d) multiplied by (g)] ;

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- j. the average hourly sulfur dioxide emission rate for each feedstock oil, in pounds per hour, calculated as specified in Section A.III.10;
  - k. the total hours of operation for each feedstock oil;
  - l. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (j) x (k) for all of the feedstock oils);
  - m. the rolling, 365-day  $\text{SO}_2$  emission rate for all feedstock oils, in tons;
    - the daily CO and VOC emission rate for each feedstock oil used in emissions units P001 and P002, in pounds per day, calculated by multiplying the hourly emission rate as determined in Section A.V.b and d. by the hours of operation (j); and,
  - o. the rolling, 365-day CO and VOC emission rates for emissions units P001, P002, P005, P006, P011, and P012, combined, in tons, including emissions from start-up and shutdown events.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = [(FSR \times SFSP) - (CBPR \times SCBP)] \times 64/32$$

where:

E = sulfur dioxide emission rate, in pounds per hour;  
 FSR = maximum recorded feedstock oil feed rate, in pounds per hour (from A.III.9.g. and h.);  
 SFSP = feedstock oil sulfur content, in weight percent (from A.III.4);  
 CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.i);  
 SCBP = carbon black sulfur content, in weight percent (from A.III.5); and,

64/32 = constant to convert molecular weight rate of sulfur to molecular weight of sulfur dioxide.

NOTE: The permittee conservatively assumes all of the sulfur emissions are emitted as sulfur dioxide emissions.

#### IV. Reporting Requirements

1. The permittee shall submit quarterly deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

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2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the Micro Motion mass flow rate meter, model number D100 or equivalent flow meter, was not functioning properly. The reports shall include the date, time, and duration of each such period, and the corrective action(s) to ensure correct operation.
3. The permittee shall submit quarterly deviation (excursion) reports that identify all exceedances of the sulfur content limitation. The reports shall include the date, time, and duration of each such period when the sulfur content of the oil used in this emissions unit is greater than 4 percent, and the corrective action to bring the sulfur content below 4 percent.
4. The permittee shall submit quarterly deviation (excursion) reports that identify any exceedance of the annual start-up and shutdown emissions limitations as listed in Section A.II.2.
5. The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from this emissions unit and (b) describe any corrective actions taken to minimize or eliminate the visible particulate emissions. These reports shall be submitted to the Director (the Ohio EPA Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
6. The permittee shall submit quarterly deviation (excursion) reports for P011 and P012, combined, that identify:
  - a. each day during which the average hourly SO<sub>2</sub> emission rate exceeded 337.3 lbs/hr, and the actual average hourly SO<sub>2</sub> emissions for each such day;
  - b. each day during which the SO<sub>2</sub> emission limitation exceeded 1,477.4 tons, and the actual SO<sub>2</sub> emissions for each such day; and,
  - c. each month during which the rolling, 12-month NO<sub>x</sub>, VOC, CO, and PM/PM<sub>10</sub> emission limitations were exceeded, and the actual emissions for that month.
7. The permittee shall submit quarterly deviation (excursion) reports for emissions units P001, P002, P005, P006, P011, and P012, combined, that identify:
  - a. all exceedances of the rolling, 12-month production rate limitation of 223,000,000 pounds of carbon black;

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- b. each day during which the rolling, 12-month emission rates exceeded the rolling, 12-month emission limitation limits listed in A.I.1.; and,
- c. each day during which the rolling, 365-day CO and VOC emission rates exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual CO and VOC emission limitations for each day a deviation occurred

Quarterly deviation reports shall be submitted as required in the General Terms and Conditions of this permit.

- 8. The permittee shall submit annual reports that include the following information:
  - a. the total hours of start-up and shutdown operations for this emissions unit for the previous calendar year, and the emissions calculated from start-up and shutdown events, calculated and recorded as required in Section A.III.2;
  - b. the total hours of operation of this emissions unit;
  - c. the total production from emissions units P001, P002, P005, P006, P011, and P012, combined; and

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- d. the total SO<sub>2</sub> emissions (including all calculations), in tons, from emissions units P001, P002, P005, P006, P011, and P012, combined, for the previous calendar year.

These reports shall be submitted to the Director (the Ohio EPA Southeast District Office) by January 31 of each year.

**V. Testing Requirements**

1. Compliance with the emission limitations in Section A.I. of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 9.17 lbs/hr of PM/PM<sub>10</sub> during normal operation from the thermal oxidizer:

Applicable Compliance Method:

If required, compliance shall be demonstrated by testing as specified in Section A.V.3 based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202 .

b. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 10.0 lbs/hr of VOC during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance may be demonstrated based upon the recordkeeping maintained in Section A.III.8 and performance of the following:

$$E = (VEF * GOB) * (1 - 0.98)$$

Where

E = VOC emission rate from emissions units P011 and P012, combined, in pounds per hour.

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VEF is the VOC emission factor per 1,000 gallons of oil burned, 200 lbs VOC/1,000 gal oil burned, submitted by the permittee and based upon their best engineering judgement and knowledge of the process.

GOB is the total gallons of oil burned per hour from emissions units P011 and P012, combined.

(1 - 0.98) 98% is the required minimum destruction efficiency of the thermal incinerator for VOCs, which may be adjusted for emission records and reporting, if testing demonstrates a more accurate control efficiency.

If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 25 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

c. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 37.0 lbs/hr of NO<sub>x</sub> during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping maintained in Section A.III.8 and performance of the following equation:

$$E = NEF * PPPH$$

where

E = NO<sub>x</sub> emission rate from emissions units P011 and P012 combined, in pounds per hour.

NEF is the NO<sub>x</sub> emission factor per 1,000 gallons of oil burned, 2.14 lbs NO<sub>x</sub>/1,000 lbs product, submitted by the permittee based upon their best engineering judgement and knowledge of the process.

PPPH is the pounds of product produced per hour from emissions units P011 and P012, combined.

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If required, compliance shall be demonstrated based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 7 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002.

d. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 10.0 lbs/hr of CO during normal operation from the thermal oxidizer:

Applicable Compliance Method:

If required, compliance shall be demonstrated by testing as specified in Section A.V.3 based upon the procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 and Method 10 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002 .

e. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 337.3 lbs/hr of SO<sub>2</sub> during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be demonstrated by testing as specified in Section A.V.3 based upon the monitoring and recordkeeping requirements specified in section A.III and the emission calculation as specified in Section A.III.10.

f. Emission Limitation:

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

Applicable Compliance Method:

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

g. Emission Limitation:

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Emissions units P011 and P012, combined, shall be limited to 1,477.4 tons based upon a rolling, 365-day summation of SO<sub>2</sub> emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.9.I.

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Emissions units P011 and P012, combined, shall be limited to 43.8 tons of CO based upon a rolling, 12-month summation of the emissions during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

i. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 162.1 tons of NO<sub>x</sub> based upon a rolling, 12-month summation of the emissions during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in A.III.8.e.

j. Emission Limitation:

Emissions units P011 and P012, combined, shall be limited to 36.3 tons of PM/PM<sub>10</sub> based upon a rolling, 12-month summation of the emissions during normal operations.

Applicable Compliance Method:

Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

k. Emission Limitation:

Emissions from emissions units P011 and P012, combined, shall be limited to 43.8 tons of VOC based upon a rolling, 12-month summation during normal operation from the thermal oxidizer:

Applicable Compliance Method:

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Compliance shall be based upon the monitoring and recordkeeping requirements as specified in Section A.III.8.e.

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**Issued: To be entered upon final issuance**I. Emission Limitations:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 12-month emission summations:

4547.0 tons of SO<sub>2</sub>;  
508.0 tons of NO<sub>x</sub>; and,  
84.9 tons of PM/PM<sub>10</sub>.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.

m. Emission Limitation:

Emissions from emissions units P001, P002, P005, P006, P011, and P012, combined, shall not exceed the following as rolling, 365-day emission summations:

151.0 tons of VOC; and,  
2556.0 tons of CO.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring and recordkeeping requirements specified in Sections A.III.

- 2.. The hourly limitations for start-up and shutdown operations in section A.I.2.a are the uncontrolled emission rates determined by the known chemical reaction of the process and represent the potentials to emit for this emissions unit; therefore, compliance with the hourly emission limitations is assumed. Compliance with the annual start-up and shutdown emission limitation(s) in Section A.I.2.a. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

0.1 ton per year of SO<sub>2</sub> during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 2.0 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

b. Emission Limitation:

4.6 tons per year of VOC during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 110 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

c. Emission Limitation:

172 tons per year of CO during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 4,112 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

d. Emission Limitation:

0.1 ton per year of NOx during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 2.4 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

e. Emission Limitation:

0.1 ton per year of particulate emissions during start-up/shutdown

Applicable Compliance Method:

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Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 2.3 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

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Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 44.5 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

g. Emission Limitation:

0.4 ton per year of COS during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 8.7 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

h. Emission Limitation:0.9 ton per year of CS<sub>2</sub> during start-up/shutdownApplicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = 20.1 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

i. Emission Limitation:

0.5 ton per year of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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$$E(\text{tpy}) = 10.7 \text{ lbs/hr} * \text{actual hours of start-up/shutdown operation} * 0.0005 \text{ ton/lb}$$

3.. If required, 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 while emissions units P011 and P012 are operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA's Southeast District Office. Additional testing under multiple "worst-case" scenarios may be required for SO<sub>2</sub>.
- b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for particulates, SO<sub>2</sub>, VOC, and CO.
- c. The following test methods shall be employed to demonstrate compliance with the allowable mass emission rates:

for particulates, Methods 1 through 5 of 40 CFR Part 60, Appendix A or 40 CFR Part 51, Appendix M, Method 201/201a and/or Method 202;  
 for SO<sub>2</sub>, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A;  
 for CO, Methods 1 through 4 and Method 10 of 40 CFR Part 60, Appendix A;  
 for VOC, Methods 1 through 4 and Methods, 18,25, or 25A, as appropriate, of 40 CFR Part 60, Appendix A; and,  
 for NO<sub>x</sub>, Methods 1 and 4 and Methods 7 of 40 CFR Part 60, Appendix A.

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

- d. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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), the person(s) who will be conducting the test(s), and the maximum feedstock oil feedrate to be used during the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA District Office's or local air agency's refusal to accept the results of the emission test(s).

Personnel from the appropriate Ohio EPA District Office or local air agency 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

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

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**VI. Miscellaneous Requirements**

None.

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**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.

| <u>Operations, Property, and/or Equipment</u> | <u>Applicable Rules/Requirements</u> | <u>Applicable Emissions Limitations/Control Measures</u> |
|---|--------------------------------------|--|
| P012 - Carbon Black Unit Number 4             | OAC rule 3745-31-05                  | None   |

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None