



State of Ohio Environmental Protection Agency

RE: DRAFT PERMIT TO INSTALL WASHINGTON COUNTY **CERTIFIED MAIL**

Street Address:

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

Mailing Address:

Lazarus Gov. Center

Application No: 06-06770

DATE: 4/3/2003

Degussa Corp
Donald Loubiere
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 for the air contaminant source(s) [emissions unit(s)] shown on the enclosed draft permit. This draft action is not an authorization to begin construction or modification of your emissions unit(s). The purpose of this draft is to solicit public comments on the 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 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 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 a fee of **\$10000** 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 Ashern, Field Operations & Permit Section at (614) 644-3631.

Very truly yours,

Michael W. Ashern

Michael W. Ashern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: USEPA

SEDO

WV

PA

PUBLIC NOTICE
ISSUANCE OF DRAFT PERMIT TO INSTALL 06-06770
SUBJECT TO PREVENTION OF SIGNIFICANT DETERIORATION REVIEW
FOR DEGUSSA CORPORATION

Public Notice is hereby given that the Staff of the Ohio Environmental Protection Agency (EPA) has recommended to the Director that Ohio EPA issue a draft action of a Permit to Install (PTI) to Degussa Corporation in Washington County, Ohio. The draft was issued on April 03, 2003.

This draft permit proposes to modify an existing Prevention of Significant Deterioration permit. The modification includes increasing the sulfur content put into the carbon black units while emitting no more pollutants. The allowable emissions in this permit are:

SO ₂	4545.8
VOC	80.4
CO	2983
NO _x	392.6
PM/PM ₁₀ (total)	84.9

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).

A draft action (permit no. 06-06770) was issued on April 03, 2003. Within 30 days from the date of this notice, any interested party may submit comments or request a public hearing. Comments are to be sent to Rex Hagy, Ohio Environmental Protection Agency, Southeast District Office, 2196 Front Street, Logan, Ohio, 43138.

Further information concerning this application, which is available for public inspection, may be secured from Rex Hagy at the Ohio Environmental Protection Agency, Southeast District Office at the above address during normal business hours. Telephone number: (740) 380 -5436.

TO: US EPA Region 5

FROM: Rod Windle, Ohio EPA, Central Office

DATE: March 28, 2003

RE: Modification to Degussa PSD permit

The purpose of this memo is to provide US EPA with an explanation of the administrative modification to the Degussa permit (PTI #06-04927). The permit's designation is now under PTI #06-06770. The only change that occurs from the original permit is the sulfur content is increased from 2 to 3 percent in the feedstock oil (which is an increase of the BACT limit). The mass emission limits for SO₂ will not change nor will the limits to any other pollutants. In order to demonstrate compliance with this tighter mass emissions limit for SO₂, the applicant has committed to perform testing of all material put into the carbon black along with daily calculations to demonstrate ongoing compliance on a 365-day rolling average.

Since SO₂ was the only pollutant whose BACT limit changes, SO₂ is the only pollutant that receive a BACT evaluation for a second time. The following is a summary of that evaluation:

Sulfur compound emissions are a product of the sulfur content contained in the carbon black feedstock oil. The BACT determinations made during previous PSD permitting actions, as documented in the RACT / BACT / LAER Clearinghouse (RBLC), have been to:

- 1.) limit the amount of sulfur in the feedstock to up to 4% sulfur by weight depending on market availability; and
- 2.) Oxidize reduced sulfur compounds to form SO₂ by combustion.

In this BACT review the following technologies were considered:

- 1.) Sulfur control in the feedstock;
- 2.) Absorption / adsorption; and
- 3.) Sulfur recovery / conversion technologies.

1.) Sulfur control in the feedstock was the BACT control selected in the original permit. A sulfur content of 2% was selected for the feedstock oil because this limit was the strictest limit preceded. This limit has been determined as technically infeasible since the original was issued because of the limited supply available for this feedstock oil. The applicant is now requesting a limit of 3% sulfur content in the feedstock oil. This limit is still acceptable as BACT based on the RBLC.

2.) No regenerable sorbent technology was considered feasible for carbon black tail-gas (either before or after combustion). So in essence 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 SCOSO_x 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. SNO_x was determined to be technically feasible; however the SNO_x will not be cost effective at 36 million to install it and 11.9 million pf annual operating cost.

The costs of the additional controls range from \$600 to \$2900 a ton. Since the 3% limit Degussa is offering to comply with is BACT in other permits and they will maintain the same annual limits established at 2% as part of BACT, Ohio EPA believes that the 2 to 3% increase still constitutes BACT because there will be no additional pollution generated by the increase on a average hourly or a annual basis. Ohio EPA has requested and Degussa has submitted a plan to demonstrate compliance with the now 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.

Please call me at 614-644-3697 if you have any questions or send me comments at rod.windle@epa.state.oh.us.

Thank you,

Rod Windle
Ohio EPA, Central Office
Division of Air Pollution Control

Synthetic Minor Determination and/or Netting Determination
Permit To Install 06-06770

A. Source Description

Degussa Corporation operates a facility which produces carbon black in Belpre, Ohio. 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

Under section 107 of the Clean Air Act, the USEPA has classified the facility location in Belpre, Ohio (Washington County) as attainment for all criteria pollutants. The counties surrounding Washington County are also designated attainment for all criteria pollutants. The Degussa, Belpre facility operates four carbon black units, two dryers and other equipment which handle, store and load the finished product. The facility wide potential to emit is as follows:

POLLUTANT	EMISSIONS ALLOWED BY THIS PERMIT (TPY)
SO ₂	4545.8
NO _X	392.6
VOC	80.4
CO	2983
PM/PM ₁₀	84.9
H ₂ S	17.3
COS	3.4
CS ₂	7.8
HCN	4.2

C. Source Emissions

Emission units P001, P002, P011, and P012 are regulated by OAC 3745-15-06, OAC 3745-17-11, OAC 3745-18-06, OAC 3745-31-05, OAC 3745-31-(10-20), and 40 CFR 52.21. If these units were operated 8,760 hours per year at maximum process weight rate the potential emissions would be:

Pollutant	Unit #1	Unit #2	Unit #3	Unit #4
SO ₂	1,266	1,121.3	573.8	902.3
VOC	21.9	19.3	0.9	1.3
NO _x	101.6	89.8	121.8	101.2
PM/PM ₁₀	13.2	15.8	6.6	11.0
CO	823	727.1	0.9	1.3

Emissions units P005 and P006 are regulated by OAC 3745-15-06, OAC 3745-17-07, OAC 3745-17-11, OAC 3745-18-06, OAC 3745-31-05, OAC 3745-31-(10-20), and 40 CFR 52.21. If these units were operated 8,760 hours per year at maximum process weight rate the potential emissions would be:

Pollutant	Dryer #1	Dryer #2
SO ₂	674.5	665.0

CO	1.0	1.0
NO _x	47.3	47.0
PM/PM ₁₀	15.8	15.0

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 2% sulfur to 3% sulfur in the oil used to produce carbon black will comply with all applicable State and Federal environmental 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. Although a review of PTI #06-04927 and this PTI indicates an increase in emissions, in reality it is not. The previous PTI did not include startup and shutdown emissions in the summary whereas this PTI does.



**Permit To Install
Terms and Conditions**

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

DRAFT PERMIT TO INSTALL 06-06770

Application Number: 06-06770
APS Premise Number: 0684010049
Permit Fee: **To be entered upon final issuance**
Name of Facility: Degussa Corp
Person to Contact: Donald Loubiere
Address: 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):
Chapter 31 modification of PTI 06-04927 to increase the percent sulfur allowable from 2 percent to 3 percent.

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Degussa Corp

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, shall be made to the appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See B.9 below if no deviations occurred during the quarter.

Degussa Corp

Facility ID: 0684010049

PTI Application: 06-06770

Issued: To be entered upon final issuance

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
- iv. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

2. Scheduled Maintenance/Malfunction Reporting

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

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

3. Risk Management Plans

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

4. Title IV Provisions

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

5. Severability Clause

Degussa Corp**Facility ID: 0684010049****PTI Application: 06-06770****Issued: To be entered upon final issuance**

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

6. General Requirements

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

7. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit To Install fees within 30 days after the issuance of this Permit To Install.

8. Federal and State Enforceability

Only those terms and conditions designated in this permit as federally enforceable, that are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA, the State, and citizens under the Act. All other terms and conditions of this permit

Degussa Corp

Facility ID: 0684010049

PTI Application: 06-06770

Issued: To be entered upon final issuance

shall not be federally enforceable and shall be enforceable under State law only.

9. Compliance Requirements

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

Degussa Corp

PTI Application: 06-06770

Issued: To be entered upon final issuance

Facility ID: 0684010049

10. Permit To Operate Application

- a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the source(s) covered by this permit.

11. Best Available Technology

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

12. Air Pollution Nuisance

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

Degussa Corp

Facility ID: 0684010049

PTI Application: 06-06770

Issued: To be entered upon final issuance

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

1. Compliance Requirements

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

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

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

3. Permit Transfers

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

4. Termination of Permit To Install

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

Degussa Corp**Facility ID: 0684010049****PTI Application: 06-06770****Issued: To be entered upon final issuance**

be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

5. Construction of New Sources(s)

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

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

6. Public Disclosure

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

7. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

8. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the

Degussa Corp

Facility ID: 0684010049

PTI Application: 06-06770

Issued: To be entered upon final issuance

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.

Degus

PTI A

Emissions Unit ID: P001

Issued: To be entered upon final issuance

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

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

C. Permit To Install Summary of Allowable Emissions

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

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

<u>Pollutant</u>	<u>Tons Per Year</u>
SO ₂	4545.8
VOC	80.4
CO	2983
NO _x	392.6
PM/PM ₁₀ (total)	84.9
H ₂ S	17.3
COS	3.4
CS ₂	7.8
HCN	4.2

17

Degussa Corp

PTI Application: 06-06770

Issued: To be entered upon final issuance

Facility ID: 0684010049

Degus

PTI A

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

Degus
PTI A

Emissions Unit ID: P001

Issued: To be entered upon final issuance

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

A. State and Federally Enforceable Section

I. Applicable Emissions Limitations and/or Control Requirements

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

Operations, Property,
and/or Equipment

Applicable Rules/Requirements

P001 - Carbon Black Unit
Number 1 (Chapter 31
modification of PTI#
06-04927, issued October
24, 1997)

OAC rule 3745-31-05(A)(3)

OAC rule 3745-31-05(D)

40 CFR 52.21

OAC rule 3745-17-07(A)

Degus

PTI A

Emissions Unit ID: P001

Issued: To be entered upon final issuance

OAC rule 3745-17-11(B)(1)	Applicable Emissions <u>Limitations/Control Measures</u>	following based upon a rolling, 12-month summation:
OAC rule 3745-18-06(E)(2)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and 40 CFR 52.21.	4,545.8 tons of SO ₂ 392.6 tons of NO _x 84.9 tons of PE
	See sections A.I.2.a and A.I.2.b 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:
	Total emissions from this emissions unit and P001 combined shall be limited to the following during normal operation from the flare:	2,983 tons of CO 80.4 tons of VOC
	3% Sulfur content, 544.3 lbs/hr, and 2,384 tons of SO ₂ based upon a rolling, 365-day summation.	See Section A.I.2.b
	43.7 lbs/hr and 191.4 tons/yr of NO _x based upon a rolling, 12-month summation.	Visible particulate emissions shall not exceed twenty percent opacity, as a six-minute average except as provided by rule.
	9.4 lbs/hr and 41.2 tons/yr of VOC based upon a rolling, 12-month summation.	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/yr of CO based upon a rolling, 12-month summation.	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/yr of PE based upon a rolling, 12-month summation.	
	See section A.I.2.c	
	Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed the	

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 SO₂
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_x
7.8 lbs/hr and 0.3 tons/yr of PM/PM₁₀
154 lbs/hr and 6.2 tons/yr of H₂S
30 lbs/hr and 1.2 tons/yr of COS
70 lbs/hr and 2.8 tons/yr of CS₂
37 lbs/hr and 1.5 tons/yr of HCN

2.b Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation. This emissions unit is currently permitted and operating, and as such, has existing records of production and emissions, therefore 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 lb/yr of carbon black shall be maintained as the rolling daily record, upon the issuance of this permit.

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

II. Operational Restrictions

- 1 This emissions unit shall:
 - a. utilize feedstock oil which contains no more than 3% 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 percent for particulate emissions and 98 percent for CO and VOC.
- 2 This emissions unit shall be limited to 81 hours per year for all start-up and shutdown operations.
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.

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 shut down;
 - b. The time period during which the start-up or shut down 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

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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 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.

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 is in operation;

Emissions Unit ID: P001

- b. all downtimes for the monitoring equipment and the associated emissions unit, while the emissions unit is 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 emission units P001, P002, P005, P006, P011 and P012 (tons carbon black/month);
 - c. the rolling, 12-month summation of the production rates for emission units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling 12 months);
 - d. the total hours of operation of this emissions unit; and
 - e. the total emission of SO₂, NO_x, PE and VOC, calculated as required in the appropriate sections in "Testing Requirements", Section V. Emissions factors submitted by the permittee in their permit application shall be applied, until better factors are developed from the most recent stack testing results for emission units P001, P002, and/or P011 and P012 prior to their thermal incinerator, in pounds of pollutant per 1,000 gallons of oil burned or per 1,000 pounds of carbon black produced.
- * a permanent, rather than monthly record may be maintained for 8.a above
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/gal);
 - 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;

Issued: To be entered upon final issuance

- h. the carbon black production rate, in pounds per hour for each hour of operation, determined by multiplying the feedstock oil feed rate (gal/hr) by the yield of the feedstock oil (lbs/gal);
 - i. the average hourly SO₂ emission rate for each feedstock oil, in pounds per hour, calculated as specified in Section A.III.10;
 - j. the total hours of operation for each feedstock oil;
 - k. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (i) x (j) for all of the feedstock oils);
 - l. the rolling, 365-day SO₂ emission rate for all feedstock oils, in tons;
 - m. the daily and year-to-date SO₂ emission rates for all carbon black products produced in this emissions unit, in pounds, i.e., the value from A.III.9.k above for all feedstock oils employed, multiplied by 66%*;;
 - n. the rolling, 365-day SO₂ emission rate for all feedstock oils, for emission units P001 and P002 combined, in tons, calculated from the records maintained for emission units P001 and P002, Section A.III.9.1 above, multiplied by the factor of 66%* for the carbon black unit/dryer split;
 - o. the average hourly CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011 and P012, in pounds per hour, calculated as specified in Section A.V.1.c & e; and
 - p. the rolling, 365-day CO and VOC emission rate for P001, P002, P005, P006, P011 and P012, in tons.
- * The factor applied above may change with future testing on the capture efficiency of the dryer and/or the emission's split between this emissions unit and/or P002 and its dryer.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = ((SFS) - (SCB)) \times (1 - TG) \times (64/32)$$

where:

Emissions Unit ID: P001

E = sulfur dioxide emission rate, in pounds per hour;
 SFS = feedstock oil sulfur weight rate, in pounds per hour;
 SCB = carbon black sulfur weight rate, in pounds per hour;
 TG = fraction of stream to tailgas (constant at .34); 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.

The feedstock oil sulfur weight rate utilized in the equation above is computed in the following manner:

$$\text{SFS} = \text{FSR} \times \text{SFSP}$$

where:

SFS = feedstock oil sulfur weight rate, in pounds per hour;
 FSR = maximum daily recorded feedstock oil feed rate, in gallons per hour (from A.III.7); and
 SFSP = feedstock oil sulfur content, in weight percent (from A.III.4).

The carbon black sulfur weight rate utilized in the equation above is computed in the following manner:

$$\text{SCB} = \text{CBPR} \times \text{SCBP}$$

where:

SCB = carbon black sulfur weight rate, in pounds per hour;
 CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.a);
 and
 SCBP = carbon black sulfur content, in weight percent (from A.III.5).

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 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 rolling, 12-month production rate limitation of 223,000,000 lb/yr carbon black for emission units P001, P002, P005, P006, P001, and P002 combined.

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4. 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 3.0 percent, and the corrective action to bring the sulfur content below 3.0 percent.
5. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the average hourly SO₂ emission rate from emission units P001 and P002 combined exceeded 544.3 lbs/hr, and the actual average hourly SO₂ emissions for each such day.
6. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the 365-day SO₂ emission rate from emission units P001 and P002 combined exceeded 2,384 tons, and the actual SO₂ emissions for each such day.
7. 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 eliminate the visible particulate emissions. These reports shall be submitted to the Director (Ohio EPA Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
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 for each 12-month period ending during the calendar year; and
 - d. the total SO₂ emissions (including all calculations), in tons, from emission 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 (Ohio EPA Southeast District Office) by January 31 of each year.

9. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 12-month emission rates for emission units P001, P002, P005, P006, P011 and P012, combined, exceeded the rolling 12-month ton per year limit listed in A.I.1.

Emissions Unit ID: P001

10. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 365-day CO and VOC emission rates from emission units P001, P002, P005, P006, P011 and P012 combined exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual SO₂ emissions for each day the deviation occurs.

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

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

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 stack testing 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 emission units P001 and P002, prior to their flare, and/or P011 and P012 prior to the thermal incinerator, as required in Sections V.4 for emission units P011 and P012. The designed destruction efficiency of 95% for PE and 98% for CO and VOC for the flare shall be used in the calculations that will demonstrate compliance with the limits for these pollutants below, since stack testing after the flare is not possible.

- a. **Emission Limitation**

Total emissions from this emissions unit and P002 shall be limited to 544.3 lb/hr of SO₂ during normal operations.

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Applicable Compliance Method

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

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, 1996.

b. **Emissions Limitation**

Total emissions from this emissions unit and P002 shall be limited to 2,384 TPY of SO₂ based upon a rolling, 365-day summation during normal operations.

Applicable Compliance Method

Compliance shall be demonstrated based upon the sum of the daily SO₂ emissions on the last day of each year, maintained and recorded as required in Section A.III.9.1, and divided by 2000 lbs/ton. Any exceedance shall be reported as required in Section IV.6.

c. **Emissions Limitation**

Total emissions from this emissions unit and P002 shall be limited to 9.4 lb/hr of VOC during normal operations.

Applicable Compliance Method

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

$$E = [(VEF * (GOB)) - ((VEF * (GOB))*(1 - 0.34))] * (1-0.98)$$

Where

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

VEF is the VOC emission factor per 1,000 gallons of oil burned (200lbs 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 emission units P001 and P002

Degussa Corp

PTI Application: 06-06770

Issued

Facility ID: 0684010049

Emissions Unit ID: P001

combined.

(1-0.34) 34 percent of the raw tailgas is captured and burned by the dryer as fuel.

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

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d. **Emissions Limitation**

Total emissions from this emissions unit and P002 shall be limited to 41.2 TPY of VOC based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operation} * 0.0005 \text{ ton/lb}$$

where

E(tpy) = the ton per year emissions of VOC from P011 and P002 combined

AHEF is the hourly emission factor for P001 and P002 combined, as determined in A.V.1.c, the value of E (lbs VOC/hr).

e. **Emissions Limitation**

Total emissions from this emissions unit and P002 shall be limited to 354.6 lbs/hr of CO during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the following equation:

$$E = [(\text{CEF} * (\text{GOB})) - ((\text{CEF} * (\text{GOB})) * (1 - 0.34))] * (1 - 0.98)$$

Where

E = CO emission rate from 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 stack testing results for P001, 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 emission units P001 and P002 combined (or if the permittee develops a factor per 1,000 pounds of product, pounds of

Issued: To be entered upon final issuance

carbon black per hour from P001 and P002).

(1-0.34) 34 percent of the raw tailgas is captured and burned by the dryer as fuel.
(1-0.98) 98 percent is the designed destruction efficiency of the flare.

f. **Emissions Limitation**

Total emissions from this emissions unit and P002 shall be limited to 1,553.1 TPY of CO based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operation} * 0.0005 \text{ ton/lb}$$

Where

E(tpy) = the ton per year emissions of CO from P001 and P002 combined
AHEF is the hourly emission factor for P001 and P002 combined, as determined in A.V.1.e, the value of E (lbs CO/hr).

g. **Emission Limitation:**

Total emissions from this emissions unit and P002 shall be limited to 43.7 lbs/hr of NOx during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the following equation:

$$E = \text{NEF} * \text{PPPH}$$

Where

E = NOx emission rate from P001 and P002 combined, in pounds per hour

NEF is the NOx emission factor per 1,000 pounds of carbon black produced or per 1,000 pounds of carbon black produced, derived from the most recent stack testing results for P001, P002, and/or P011 and P012 prior to their thermal incinerator. Until testing is complete "2.14 lbs NOx/1,000 gallons of oil burned", shall be used to calculate emissions,

Degus

PTI A

Emissions Unit ID: P001

Issued: To be entered upon final issuance

submitted by the permittee and based upon their best engineering judgement and knowledge of the process.

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

Issued: To be entered upon final issuanceh. **Emission Limitation:**

Total emissions from this emissions unit and P002 shall be limited to 191.4 TPY of NO_x based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

$$E = NEF * PPPY * 0.0005 \text{ ton/lb}$$

Where

E(tpy) = the ton per year emissions of NO_x from P001 and P002 combined

NEF is the NO_x emissions in pounds per 1,000 pounds of product (or per 1,000 gallons of oil burned); and

PPPY is the pounds of product produced per year on P001 and P002 combined (or gallons of oil burned).

i. **Emission Limitation:**

Total emissions from this emissions unit and P002 shall be limited to 5.7 lbs/hr of particulate emissions during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the following equation:

$$E = PEM * PPPH * (1 - 0.95)$$

where

E = PE emission rate from 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 stack testing results from P001, 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

Emissions Unit ID: P001

permittee based upon their best engineering judgement and knowledge of the process; and

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

(1 - 0.95) 95% is the control efficiency of the flare for PE.

j. **Emission Limitation:**

Total emissions from this emissions unit and P002 shall be limited to 24.9 TPY of particulate emissions based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHER} * \text{actual hours of normal operation} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of PE from P001 and P002 combined, determined in A.V.1.i, the value of E (lbs PE/hr).

AHER is the actual hourly emission rate from P001 and P002 combined, determined in A.V.1.i.

k. **Emission Limitation:**

Visible particulate emissions shall not exceed twenty percent opacity, as a six-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).

2. Compliance with the operational restrictions in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. **Operational Restriction:**

Maximum annual production of carbon black for emission units P001, P002, P005, P006,

36

Degus

PTI A

Emissions Unit ID: P001

Issued: To be entered upon final issuance

P011 and P012 combined shall not exceed 223,000,000 pounds as a rolling 12-month average.

Issued: To be entered upon final issuance**Applicable Compliance Method:**

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.8.

b. Operational Restriction:

This emissions unit shall utilize feedstock oil which contains no more than 3% sulfur.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Sections A.III.3 and A.III.4.

c. Operational Restriction:

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

Applicable Compliance Method:

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

d. Operational Restriction:

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

4,545.8 tons of SO₂
392.6 tons of NO_x
84.9 tons of PE

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring, recordkeeping, reporting and testing requirements specified in Sections A.III, A.IV, and A.V.

e. Operational Restriction:

Annual emissions from emission units P001, P002, P005, P006, P011 and P012 combined

Emissions Unit ID: P001

shall not exceed the following as a rolling 365-day average:

80.4 tons of VOC
 2,983 tons of CO

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring, recordkeeping, reporting and testing requirements specified in Sections A.III, A.IV, and A.V.

3. 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 TPY of SO₂ 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 TPY 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 TPY of CO during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

Issued: To be entered upon final issuance

d. **Emission Limitation:**

0.3 TPY of NO_x 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 TPY 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 TPY of H₂S 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 TPY of COS during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

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2.8 TPY of CS₂ 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 TPY of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

VI. Miscellaneous Requirements

1. For purposes of this permit to install, normal operations is any time except during startup or shutdown of the emissions unit.

Issued: To be entered upon final issuance

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	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

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 (Chapter 31 modification of PTI# 06-04927, issued October 24, 1997)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-31-05(D)
	40 CFR 52.21	
		OAC rule 3745-17-07(A)
		OAC rule 3745-17-11(B)(1)
		OAC rule 3745-18-06(E)(2)

Degus**PTI A**

Emissions Unit ID: P002

Issued: To be entered upon final issuance

Applicable Emissions
Limitations/Control
Measures

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(D), and 40 CFR 52.21.

See A.I.2.a and A.I.2.b below

Total emissions from this emissions unit and P001 combined shall be limited to the following during normal operation from the flare:

3% Sulfur content, 544.3 lbs/hr, and 2,384 tons of SO₂ based upon a rolling, 365-day summation.

43.7 lbs/hr and 191.4 tons/yr of NO_x based upon a rolling, 12-month summation.

9.4 lbs/hr and 41.2 tons/yr of VOC based upon a rolling, 12-month summation.

354.6 lbs/hr and 1,553.1 tons/yr of CO based upon a rolling, 12-month summation.

5.7 lbs/hr and 24.9 tons/yr of PE based upon a rolling, 12-month summation.

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, 12-month summation:

4,545.8 tons of SO₂
 392.6 tons of NO_x
 84.9 tons of PE

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:

80.4 tons of VOC
 2,983 tons of CO

Visible particulate emissions shall not exceed twenty percent opacity, as a six-minute average except as provided by rule.

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).

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 SO₂
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_x
7.8 lbs/hr and 0.3 tons/yr of PM/PM₁₀
154 lbs/hr and 6.2 tons/yr of H₂S
30 lbs/hr and 1.2 tons/yr of COS
70 lbs/hr and 2.8 tons/yr of CS₂
37 lbs/hr and 1.5 tons/yr of HCN

2.b Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation. This emissions unit is currently permitted and operating, and as such, has existing records of production and emissions, therefore 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 lb/yr of carbon black shall be maintained as the rolling daily record, upon the issuance of this permit.

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

II. Operational Restrictions

- 1 This emissions unit shall:
 - a. utilize feedstock oil which contains no more than 3% 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 percent for particulate emissions and 98 percent for CO and VOC.
- 2 This emissions unit shall be limited to 81 hours per year for all start-up and shutdown operations.
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.

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 shut down;
 - b. The time period during which the start-up or shut down 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

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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 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.

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

Emissions Unit ID: P002

equivalent monitor, was not in operation while the emissions unit is in operation;

- b. all downtimes for the monitoring equipment and the associated emissions unit, while the emissions unit is 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 emission units P001, P002, P005, P006, P011 and P012 (tons carbon black/month);
 - c. the rolling, 12-month summation of the production rates for emission units P001, P002, P005, P006, P011, and P012, combined (tons carbon black/rolling 12 months);
 - d. the total hours of operation of this emissions unit; and
 - e. the total emission of SO₂, NO_x, CO, PE and VOC, calculated as required in the appropriate sections in "Testing Requirements", Section V. Emissions factors submitted by the permittee in their permit application shall be applied, until better factors are developed from the most recent stack testing results for emission units P001, P002, and/or P011 and P012 prior to their thermal incinerator, in pounds of pollutant per 1,000 gallons of oil burned or per 1,000 pounds of carbon black produced.
- * a permanent, rather than monthly record may be maintained for 8.a above
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/gal);
 - 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;

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- h. the carbon black production rate, in pounds per hour for each hour of operation, determined by multiplying the feedstock oil feed rate (gal/hr) by the yield of the feedstock oil (lbs/gal);
 - i. the average hourly sulfur dioxide emission rate for each feedstock oil, in pounds per hour, calculated as specified in Section A.III.10;
 - j. the total hours of operation for each feedstock oil;
 - k. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (i) x (j) for all of the feedstock oils);
 - l. the rolling, 365-day SO₂ emission rate for all feedstock oils, in tons;
 - m. the daily and year-to-date SO₂ emission rates for all carbon black products produced in this emissions unit, in pounds, i.e., the value from A.III.9.k above for all feedstock oils employed, multiplied by 66%*;;
 - n. the rolling, 365-day SO₂ emission rate for all feedstock oils, for emission units P001 and P002 combined, in tons, calculated from the records maintained for emission units P001 and P002, Section A.III.9.l above, multiplied by the factor of 66%* for the carbon black unit/dryer split;
 - o. the average hourly CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011 and P012, in pounds per hour, calculated as specified in Section A.V.1.c & e; and
 - p. the rolling, 365-day CO and VOC emission rate for P001, P002, P005, P006, P011 and P012, in tons.
- * The factor applied above may change with future testing on the capture efficiency of the dryer and/or the emission's split between this emissions unit and/or P002 and its dryer.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = ((SFS) - (SCB)) \times (1 - TG) \times (64/32)$$

where:

Emissions Unit ID: P002

E = sulfur dioxide emission rate, in pounds per hour;
 SFS = feedstock oil sulfur weight rate, in pounds per hour;
 SCB = carbon black sulfur weight rate, in pounds per hour;
 TG = fraction of stream to tailgas (constant at .34); 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.

The feedstock oil sulfur weight rate utilized in the equation above is computed in the following manner:

$$SFS = FSR \times SFSP$$

where:

SFS = feedstock oil sulfur weight rate, in pounds per hour;
 FSR = maximum daily recorded feedstock oil feed rate, in gallons per hour (from A.III.7); and
 $SFSP$ = feedstock oil sulfur content, in weight percent (from A.III.4).

The carbon black sulfur weight rate utilized in the equation above is computed in the following manner:

$$SCB = CBPR \times SCBP$$

where:

SCB = carbon black sulfur weight rate, in pounds per hour;
 $CBPR$ = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.a);
and
 $SCBP$ = carbon black sulfur content, in weight percent (from A.III.5).

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 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 rolling, 12-month production rate limitation of 223,000,000 lb/yr carbon black for emission units P001, P002, P005, P006, P011, and P012 combined.

Issued: To be entered upon final issuance

4. 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 3.0 percent, and the corrective action to bring the sulfur content below 3.0 percent.
5. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the average hourly SO₂ emission rate from emission units P001 and P002 combined exceeded 544.3 lbs/hr, and the actual average hourly SO₂ emissions for each such day.
6. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the 365-day SO₂ emission rate from emission units P001 and P002 combined exceeded 2,384 tons, and the actual SO₂ emissions for each such day.
7. 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 eliminate the visible particulate emissions. These reports shall be submitted to the Director (Ohio EPA Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
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 for each 12-month period ending during the calendar year; and
 - d. the total SO₂ emissions (including all calculations), in tons, from emission 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 (Ohio EPA Southeast District Office) by January 31 of each year.

9. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 12-month emission rates for emission units P001, P002, P005, P006, P011 and P012, combined, exceeded the rolling 12-month ton per year limit listed in A.I.1.

Degussa Corp**PTI Application: 06-06770****Issued****Facility ID: 0684010049**

Emissions Unit ID: P002

10. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 365-day CO and VOC emission rates from emission units P001, P002, P005, P006, P011 and P012 combined exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual SO₂ emissions for each day the deviation occurs.

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

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

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 stack testing 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 emission units P001 and P002, prior to their flare, and/or P011 and P012 prior to the thermal incinerator, as required in Sections V.4 for emission units P011 and P012. The designed destruction efficiency of 95% for PE and 98% for CO and VOC for the flare shall be used in the calculations that will demonstrate compliance with the limits for these pollutants below, since stack testing after the flare is not possible.

- a. **Emission Limitation**

Total emissions from this emissions unit and P001 shall be limited to 544.3 lb/hr of SO₂ during normal operations.

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Applicable Compliance Method

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

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, 1996.

b. **Emissions Limitation**

Total emissions from this emissions unit and P001 shall be limited to 2,384 TPY of SO₂ based upon a rolling, 365-day summation during normal operations.

Applicable Compliance Method

Compliance shall be demonstrated based upon the sum of the daily SO₂ emissions on the last day of each year, maintained and recorded as required in Section A.III.9.1, and divided by 2000 lbs/ton. Any exceedance shall be reported as required in Section IV.6.

c. **Emissions Limitation**

Total emissions from this emissions unit and P001 shall be limited to 9.4 lb/hr of VOC during normal operations.

Applicable Compliance Method

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

$$E = [(VEF * (GOB)) - ((VEF * (GOB))*(1 - 0.34))] * (1-0.98)$$

Where

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

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

Emissions Unit ID: P002

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

(1-0.34) 34 percent of the raw tailgas is captured and burned by the dryer as fuel

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

d. **Emissions Limitation**

Total emissions from this emissions unit and P001 shall be limited to 41.2 TPY of VOC based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operation} * 0.0005 \text{ ton/lb}$$

where

E(tpy) = the ton per year emissions of VOC from P001 and P002 combined

AHEF is the hourly emission factor for P001 and P002 combined, as determined in A.V.1.c, the value of E (lbs VOC/hr).

e. **Emissions Limitation**

Total emissions from this emissions unit and P001 shall be limited to 354.6 lbs/hr of CO during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the following equation:

$$E = [(\text{CEF} * (\text{GOB})) - ((\text{CEF} * (\text{GOB})) * (1 - 0.34))] * (1 - 0.98)$$

Where

E = CO emission rate from 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 stack testing results for P001, 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 emission 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 P001 and P002).

54

Degus

PTI A

Emissions Unit ID: P002

Issued: To be entered upon final issuance

(1-0.34) 34 percent of the raw tailgas is captured and burned by the dryer as fuel

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

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f. **Emissions Limitation**

Total emissions from this emissions unit and P001 shall be limited to 1,553.1 TPY of CO based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operation} * 0.0005 \text{ ton/lb}$$

Where

E(tpy) = the ton per year emissions of CO from P001 and P002 combined
AHEF is the hourly emission factor for P001 and P002 combined, as determined in A.V.1.e, the value of E (lbs CO/hr).

g. **Emission Limitation:**

Total emissions from this emissions unit and P001 shall be limited to 43.7 lbs/hr of NOx during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the following equation:

$$E = \text{NEF} * \text{PPPH}$$

Where

E = NOx emission rate from P001 and P002 combined, in pounds per hour.

NEF is the NOx emission factor per 1,000 pounds of carbon black produced or per 1,000 pounds of carbon black produced, derived from the most recent stack testing results for P001, P002, and/or P011 and P012 prior to their thermal incinerator. Until testing is complete "2.14 lbs NOx/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.

Degus

PTI A

Emissions Unit ID: P002

Issued: To be entered upon final issuance

PPPH is the pounds of product produced per hour from emission 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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h. **Emission Limitation:**

Total emissions from this emissions unit and P001 shall be limited to 191.4 TPY of NO_x based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

$$E = NEF * PPPY * 0.0005 \text{ ton/lb}$$

Where

E(tpy) = the ton per year emissions of NO_x from P001 and P002 combined

NEF is the NO_x emissions in pounds per 1,000 pounds of product (or per 1,000 gallons of oil burned); and

PPPY is the pounds of product produced per year on P001 and P002 combined (or gallons of oil burned).

i. **Emission Limitation:**

Total emissions from this emissions unit and P001 shall be limited to 5.7 lbs/hr of particulate emissions during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the following equation:

$$E = PEM * PPPH * (1 - 0.95)$$

where

E = PE emission rate from 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 stack testing results from P001, P002, and/or P011 and P012, prior to their thermal incinerator. Until testing is completed,

Emissions Unit ID: P002

"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; and

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

$(1 - 0.95)$ 95% is the control efficiency of the flare for PE.

j. **Emission Limitation:**

Total emissions from this emissions unit and P001 shall be limited to 24.9 TPY of particulate emissions based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHER} * \text{actual hours of normal operation} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of PE from P001 and P002 combined, determined in A.V.1.i, the value of E (lbs PE/hr)

AHER is the actual hourly emission rate from P001 and P002 combined, determined in A.V.1.i.

k. **Emission Limitation:**

Visible particulate emissions shall not exceed twenty percent opacity, as a six-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).

2. Compliance with the operational restrictions in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. **Operational Restriction:**

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Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds as a rolling 12-month average.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.8.

b Operational Restriction:

This emissions unit shall utilize feedstock oil which contains no more than 3% sulfur.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Sections A.III.3 and A.III.4.

c. Operational Restriction:

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

Applicable Compliance Method:

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

d. Operational Restriction:

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

4,545.8 tons of SO₂

392.6 tons of NO_x

84.9 tons of PE

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring, recordkeeping, reporting and testing requirements specified in Sections A.III, A.IV, and A.V.

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d. **Operational Restriction:**

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

80.4 tons of VOC

2,983 tons of CO

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monitoring, recordkeeping, reporting and testing requirements specified in Sections A.III, A.IV, and A.V.

3. 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 TPY of SO₂ 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 TPY 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 TPY 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 TPY of NO_x 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 TPY 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 TPY of H₂S 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 TPY of COS during start-up/shutdown

Applicable Compliance Method:

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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 TPY of CS₂ 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 TPY of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

VI. Miscellaneous Requirements

1. For purposes of this permit to install, normal operations is any time except during startup or shutdown of the emissions unit.

Degus

PTI A

Emissions Unit ID: P002

Issued: To be entered upon final issuance**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	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

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>
P005 - Unit Number 1 Dryer (Chapter 31 modification to PTI#06-04927, issued October 24, 1997)	OAC rule 3745-31-05(A)(3)
	40 CFR 52.21
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-18-06(E)(2)
	OAC rule 3745-31-05(D)

Degus**PTI A**

Emissions Unit ID: P005

Issued: To be entered upon final issuance

<u>Applicable Emissions Limitations/Control Measures</u>	
The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(D), and 40 CFR 52.21.	combined shall not exceed 4,547 tons of SO ₂ based upon a rolling 12-month summation.
See A.I.2.a	4,545.8 tons of SO ₂ 392.6 tons of NO _x 84.9 tons of PE Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 4,547 tons of SO ₂ based upon a rolling 365-day summation.
Total emissions from this emissions unit and P005 combined shall be limited to the following from the central stack.	80.4 tons of VOC 2,983 tons of CO
3% sulfur content, 290.4 lbs/hr, and 1,272 tons/yr of SO ₂ on a 365-day rolling basis	Visible particulate emissions shall not exceed twenty percent opacity, as a six-minute average except as provided by rule.
20.3 lbs/hr and 88.9 tons/yr of NO _x based upon a rolling 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
0.4 lb/hr and 1.8 tons/yr of CO based upon a rolling 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
6.8 lbs/hr and 29.8 tons/yr of PM/PM ₁₀ based upon a rolling 12-month summation.	
See section A.I.2.b	
Total emissions from emission units P001, P002, P005, P006, P011 and P012	

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

- 2.a** Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation. This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, therefore eliminating the need to establish the first year's cumulative rolling 12-month summation carbon black production. The existing, previous 12-month record of the 223,000,000 lb/yr of carbon black shall be maintained as the rolling monthly record, upon the issuance of this permit.
- 2.b** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

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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.

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 emission units P001, P002, P005, P006, P011 and P012 (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; and
 - d. the total emission of SO₂, NO_x, CO and PE calculated by multiplying the hours of operation during the month (c) for both emission units P005 and P006, times the pound per hour emissions for each pollutant, as determined in the most recent stack test. The pound per hour emission limits shall be used until better factors are developed from the stack testing requirements found in Section A.V.3.
3. The permittee shall maintain daily records of the following information:
 - a. the average hourly SO₂ emission rate for each carbon black product dried in this emissions unit, in pounds per hour, i.e., the value from Section A.III.9.i for emissions unit P001 for each feedstock oil employed, multiplied by 34% for the carbon black unit-to-dryer split;
 - b. the daily and year-to-date SO₂ emission rates for all carbon black products dried in this emissions unit, in pounds, i.e., the value from Section A.III.9.k for emissions unit P001 for all feedstock oils employed, multiplied by 34% for the carbon black unit-to-dryer split;
 - c. the annual SO₂ emission rate for all feedstock oils, for emission units P005 and P006

Emissions Unit ID: P005

combined, in tons, calculated from the records maintained for emission units P001 and P002, and multiplying the factor of 34% for the carbon black unit-to-dryer split;

- d. the average hourly CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011 and P012, in pounds per hour, calculated using the feed oil recordkeeping and the equations as specified in P001; and
- e. the rolling, 365-day CO and VOC emission rate for P001, P002, P005, P006, P011 and P012, in tons.

The factor applied above may change with future testing on the capture efficiency of the dryer and/or the emission's split between P001 and this dryer.

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 that identify all exceedances of the rolling, 12-month production rate limitation for emission units P001, P002, P005, P006, P011 and P012.
3. The permittee shall submit annual reports that include the following information:
 - a. the total hours of operation of this emissions unit;
 - b. the total production from emissions units P001, P002, P005, P006, P011, and P012; and
 - c. the emissions (including all calculations), in tons, from this emissions unit for the previous calendar year for each pollutant with a ton per year limit in Section A.I.1.

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

4. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the average hourly SO₂ emission rate from emission units P005 and P006 combined exceeded 290.4 lbs/hr, and the actual average hourly SO₂ emissions for each such day.
5. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the annual SO₂ emission rate from emission units P005 and P006 combined exceeded 1,271 tons, and the actual SO₂ emissions for each such 365 day period.
6. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling, 365-day SO₂ emissions rate for emission units P001, P002, P005, P006, P011 and P012 combined, exceeded 4,545 tons, and the actual SO₂ emissions for each such 365 day

Issued: To be entered upon final issuance
period.

7. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 365-day CO and VOC emission rates from emission units P001, P002, P005, P006, P011 and P012 combined exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual SO₂ emissions for each day the deviation occurs.

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

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

- a. **Emission Limitation:**

Total emissions from this emissions unit and P006 combined shall not exceed 6.8 lbs/hr of particulate emissions.

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 this emissions unit and P006 combined shall not exceed 0.4 lb/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 this emissions unit and P006 combined shall not exceed 20.3 lbs/hr of NO_x.

Applicable Compliance Method:

70

Degussa Corp

PTI Application: 06 06770

Issued

Facility ID: 0684010049

Emissions Unit ID: P005

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.

Issued: To be entered upon final issuance

d. **Emission Limitation:**

Total emissions from this emissions unit and P006 combined shall not exceed 290.4 lbs/hr of SO₂.

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:**

Visible particulate emissions shall not exceed twenty percent opacity, as a six-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).

f. **Emission Limitation:**

Total emissions from this emissions unit and P006 shall not exceed 1,272 tpy of SO₂ per year based upon a rolling, 365-day summation.

Applicable Compliance Method:

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

g. **Emission Limitation:**

Total emissions from this emissions unit and P006 shall not exceed 29.8 tpy of particulate emissions based upon a rolling, 12-month summation.

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

72

Degus

PTI A

Issued: To be entered upon final issuance

Emissions Unit ID: P005

$$E(\text{tpy}) = \text{HER} * \text{AHO} * 0.0005 \text{ ton/lb}$$

where

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$E(\text{tpy})$ = the ton per year emissions of PE from emission units P005 and P006 combined

HER is the hourly emission rate in pounds of particulate emissions from emission units P005 and P006 combined, as determined during the most recent performance test, and

AHO is the actual hours of operation during which emissions are being vented through the central stack.

h. **Emission Limitation:**

Total emissions from this emissions unit and P006 shall not exceed 1.8 tpy of CO based upon a rolling, 12-month summation.

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = \text{HER} * \text{AHO} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of CO from emission units P005 and P006 combined

HER is the hourly emission rate in pounds of CO from emission units P005 and P006 combined, as determined during the most recent performance test, and

AHO is the actual hours of operation during which emissions are being vented through the central stack.

i. **Emission Limitation:**

Total emissions from this emissions unit and P006 shall not exceed 88.9 tpy of NO_x based upon a rolling, 12-month summation.

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = \text{HER} * \text{AHO} * 0.0005 \text{ ton/lb}$$

where

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$E(\text{tpy})$ = the ton per year emissions of NO_x from emission units P005 and P006 combined

HER is the hourly emission rate in pounds of NO_x from emission units P005 and P006 combined, as determined during the most recent performance test, and

AHO is the actual hours of operation during which emissions are being vented through the central stack.

2. Compliance with the operational restrictions in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. **Operational Restriction:**

Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation.

Applicable Compliance Method

Compliance shall be demonstrated based upon the recordkeeping requirements specified in Section A.III.8.

b. **Operational Restriction**

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

4,545.8 tons of SO₂

392.6 tons of NO_x

84.9 tons of PE

Applicable Compliance Method:

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

c. **Operational Restriction**

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

80.4 tons of VOC

2,983 tons of CO

Applicable Compliance Method:

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

3. The permittee shall conduct, or have conducted, emission testing for emission units P005 and P006 combined in accordance with the following requirements:
 - a. The emission testing shall be conducted within 60 days after the issuance of this permit and while using a feedstock oil with 3% sulfur.
 - b. The emission testing shall be conducted for emission units P005 and P006 to demonstrate compliance with the combined allowable mass emission rates for CO, particulates, SO₂, and NO_x.
 - 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;
 for SO₂, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A;
 for NO_x, 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.

- d. The test(s) shall be conducted while emission units P005 and P006 and emission units P001 and P002 are all operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA Southeast District Office.

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). 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.

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PTI A

Emissions Unit ID: P005

Issued: To be entered upon final issuance

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA 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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PTI A

Emissions Unit ID: P005

Issued: To be entered upon final issuance**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 Dryer	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

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 (Chapter 31 modification to PTI#06-04927, issued October 24, 1997)	OAC rule 3745-31-05(A)(3)
	40 CFR 52.21
	OAC rule 3745-17-07(A)
	OAC rule 3745-17-11(B)(1)
	OAC rule 3745-18-06(E)(2)
	OAC rule 3745-31-05(D)

Degus**PTI A**

Emissions Unit ID: P006

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<u>Applicable Emissions Limitations/Control Measures</u>	
The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(D), and 40 CFR 52.21.	combined shall not exceed the following based upon a rolling 12-month summation. 4,545.8 tons of SO ₂ 392.6 tons of NO _x 84.9 tons of PE
See A.I.2.a	Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 4,547 tons of SO ₂ based upon a rolling 365-day summation.
Total emissions from this emissions unit and P005 combined shall be limited to the following from the central stack.	80.4 tons of VOC 2,983 tons of CO
3% sulfur content, 290.4 lbs/hr and 1,272 tons/yr of SO ₂ based upon a rolling 365-day summation.	Visible particulate emissions shall not exceed twenty percent opacity, as a six-minute average except as provided by rule.
20.3 lbs/hr and 88.9 tons/yr of NO _x based upon a rolling 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
0.4 lb/hr and 1.8 tons/yr of CO based upon a rolling 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
6.8 lbs/hr and 29.8 tons/yr of PM/PM ₁₀ based upon a rolling 12-month summation.	
See section A.I.2.b	
Total emissions from emission units P001, P002, P005, P006, P011 and P012	

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

- 2.a** Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation. This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, therefore eliminating the need to establish the first year's cumulative rolling 12-month summation carbon black production. The existing, previous 12-month record of the 223,000,000 lb/yr of carbon black shall be maintained as the rolling monthly record, upon the issuance of this permit.
- 2.b** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

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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.

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 emission units P001, P002, P005, P006, P011 and P012 (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); and
 - c. the total hours of operation of this emissions unit; and
 - d. the total emission of SO₂, NO_x, and PE calculated by multiplying the hours of operation during the month (c) for both emission units P005 and P006, times the pound per hour emissions for each pollutant, as determined in the most recent stack test. The pound per hour emission limits shall be used until better factors are developed from the stack testing requirements found in Section A.V.3.
3. The permittee shall maintain daily records of the following information:
 - a. the average hourly SO₂ emission rate for each carbon black product dried in this emissions unit, in pounds per hour, i.e., the value from Section A.III.9.i for emissions unit P001 for each feedstock oil employed, multiplied by 34% for the carbon black unit-to-dryer split;
 - b. the daily and year-to-date SO₂ emission rates for all carbon black products dried in this emissions unit, in pounds, i.e., the value from Section A.III.9.k for emissions unit P001 for all feedstock oils employed, multiplied by 34% for the carbon black unit-to-dryer split;
 - c. the annual SO₂ emission rate for all feedstock oils, for emission units P005 and P006

Emissions Unit ID: P006

combined, in tons, calculated from the records maintained for emission units P001 and P002, and multiplying the factor of 34% for the carbon black unit-to-dryer split;

- d. the average hourly CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011 and P012, in pounds per hour, calculated using the feed oil recordkeeping and the equations as specified in P001; and
- e. the rolling, 365-day CO and VOC emission rate for P001, P002, P005, P006, P011 and P012, in tons.

The factor applied above may change with future testing on the capture efficiency of the dryer and/or the emission's split between P002 and this dryer.

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 that identify all exceedances of the rolling, 12-month production rate limitation for emission units P001, P002, P005, P006, P011 and P012.
3. The permittee shall submit annual reports that include the following information:
 - a. the total hours of operation of this emissions unit;
 - b. the total production from emissions units P001, P002, P005, P006, P011, and P012; and
 - c. the emissions (including all calculations), in tons, from this emissions unit for the previous calendar year for each pollutant with a ton per year limit in Section A.I.1.

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

4. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the average hourly SO₂ emission rate from emission units P005 and P006 combined exceeded 290.4 lbs/hr, and the actual average hourly SO₂ emissions for each such day.
5. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the annual SO₂ emission rate from emission units P005 and P006 combined exceeded 1,271 tons, and the actual SO₂ emissions for each such 365 day period.
6. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling, 365-day SO₂ emissions rate for emission units P001, P002, P005, P006, P011 and P012 combined, exceeded 4,545 tons, and the actual SO₂ emissions for each such 365 day

Emissions Unit ID: P006

period.

7. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 365-day CO and VOC emission rates from emission units P001, P002, P005, P006, P011 and P012 combined exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual SO₂ emissions for each day the deviation occurs.

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

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

- a. **Emission Limitation:**

Total emissions from this emissions unit and P005 combined shall not exceed 6.8 lbs/hr of particulate emissions.

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 this emissions unit and P005 combined shall not exceed 0.4 lb/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 this emissions unit and P005 combined shall not exceed 20.3 lbs/hr of NO_x.

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.

Issued: To be entered upon final issuanced. **Emission Limitation:**

Total emissions from this emissions unit and P005 combined shall not exceed 290.4 lbs/hr of SO₂.

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:**

Visible particulate emissions shall not exceed twenty percent opacity, as a six-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).

f. **Emission Limitation:**

Total emissions from this emissions unit and P005 shall not exceed 1,272 tpy of SO₂ per year based upon a rolling, 365-day summation.

Applicable Compliance Method:

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

g. **Emission Limitation:**

Total emissions from this emissions unit and P005 shall not exceed 29.8 tpy of particulate emissions based upon a rolling, 12-month summation.

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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$$E(\text{tpy}) = \text{HER} * \text{AHO} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of PE from emission units P005 and P006 combined

HER is the hourly emission rate in pounds of particulate emissions from emission units P005 and P006 combined, as determined during the most recent performance test, and

AHO is the actual hours of operation during which emissions are being vented through the central stack.

h. **Emission Limitation:**

Total emissions from this emissions unit and P005 shall not exceed 1.8 tpy of CO based upon a rolling, 12-month summation.

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

$$E(\text{tpy}) = \text{HER} * \text{AHO} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of CO from emission units P005 and P006 combined.

HER is the hourly emission rate in pounds of CO from emission units P005 and P006 combined, as determined during the most recent performance test, and

AHO is the actual hours of operation during which emissions are being vented through the central stack.

i. **Emission Limitation:**

Total emissions from this emissions unit and P005 shall not exceed 88.9 tpy of NO_x based upon a rolling, 12-month summation.

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

Emissions Unit ID: P006

$$E(\text{tpy}) = \text{HER} * \text{AHO} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of NO_x from emission units P005 and P006 combined

HER is the hourly emission rate in pounds of NO_x from emission units P005 and P006 combined, as determined during the most recent performance test, and

AHO is the actual hours of operation during which emissions are being vented through the central stack.

2. Compliance with the operational restrictions in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. **Operational Restriction:**

Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in section A.III.2.

b. **Operational Restriction:**

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

4,545.8 tons of SO₂
 392.6 tons of NO_x
 84.9 tons of PE

Applicable Compliance Method:

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

c. **Operational Restriction:**

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

80.4 tons of VOC

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2,983 tons of CO

Applicable Compliance Method:

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

3. The permittee shall conduct, or have conducted, emission testing for emission units P005 and P006 combined in accordance with the following requirements:
 - a. The emission testing shall be conducted within 60 days after the issuance of this permit and while using a feedstock oil with 3% sulfur.
 - b. The emission testing shall be conducted for emission units P005 and P006 to demonstrate compliance with the combined allowable mass emission rates for CO, particulates, SO₂, and NO_x.
 - 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;
for SO₂, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A; and
for NO_x, Methods 1 through 4 and Method 7 of 40 CFR Part 60, Appendix A;
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.

- d. The test(s) shall be conducted while emission units P005 and P006 and emission units P001 and P002 are all operating at or near their maximum capacities, unless otherwise specified or approved by the Ohio EPA Southeast District Office.

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). 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

Degus**PTI A**

Emissions Unit ID: P006

Issued: To be entered upon final issuance

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 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 Dryer	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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PTI A

Emissions Unit ID: P011

Issued: To be entered upon final issuance

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 (Chapter 31 modification to PTI#06-04927, issued October 24, 1997)	OAC rule 3745-31-05(A)(3)	OAC rule 3745-31-05(D)
	40 CFR 52.21	
		OAC rule 3745-17-07(A)

**Degus
PTI A**

Emissions Unit ID: P011

Issued: To be entered upon final issuance

OAC rule 3745-17-11(B)(1)	Applicable Emissions <u>Limitations/Control Measures</u>	following based upon a rolling, 12-month summation
OAC rule 3745-18-06(E)(2)	The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(D), and 40 CFR 52.21.	4,545.8 tons of SO ₂ 392.6 tons of NO _x 84.9 tons of PE
	See A.I.2.a and A.I.2.b 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:
	Total emissions from this emissions unit and P012 combined shall be limited to the following during normal operation from the thermal oxidizer:	80.4 tons of VOC 2,983 tons of CO
	337.3 lbs/hr and 1,477.4 tons/yr of SO ₂ on rolling 365-day basis	Visible particulate emissions shall not exceed twenty percent opacity, as a six-minute average except as provided by rule.
	37.0 lb/hr and 162.1 tons/yr of NO _x based upon a rolling 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	0.5 lb/hr and 2.2 tons/yr of VOC based upon a rolling 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	0.5 lbs/hr and 2.2 tons/yr of CO based upon a rolling 12-month summation.	
	9.17 lbs/hr and 36.3 tons/yr of PM/PM ₁₀ based upon a rolling 12-month summation.	
	See Section A.I.2.c	
	Total emissions from emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed the	

Degus

PTI A

Emissions Unit ID: P011

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):

- 2.0 lbs/hr and 0.1 tons/yr of SO₂
- 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_x
- 2.3 lbs/hr and 0.1 tons/yr of PM/PM₁₀
- 44.5 lbs/hr and 1.9 tons/yr of H₂S
- 8.7 lbs/hr and 0.4 tons/yr of COS

Emissions Unit ID: P011

20.1 lbs/hr and 0.9 tons/yr of CS₂
10.7 lbs/hr and 0.5 tons/yr of HCN

- 2.b** Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation. This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, therefore eliminating the need to establish the first year's cumulative rolling 12-month summation carbon black production. The existing, previous 12-month record of the 223,000,000 lb/yr of carbon black shall be maintained as the rolling monthly record, upon the issuance of this permit.
- 2.c** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

II. Operational Restrictions

1. This emissions unit shall
 - a. utilize feedstock oil which contains no more than 3% 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 NO_x.
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 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.

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

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- 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

Emissions Unit ID: P011

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 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 is 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 emission 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-months); and
- d. the total hours of operation of this emissions unit.

* a permanent, rather than monthly record may be maintained for 8.a above

- 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/gal);
 - 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 carbon black production rate, in pounds per hour for each hour of operation, determined by multiplying the feedstock oil feed rate (gal/hr) by the yield of the feedstock oil (lbs/gal);
 - i. the average hourly sulfur dioxide emission rate for each feedstock oil, in pounds per hour, calculated as specified in Section A.III.10;
 - j. the total hours of operation for each feedstock oil;
 - k. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation of (i) x (j) for all of the feedstock oils);

Emissions Unit ID: P011

- l. the rolling, 365-day SO₂ emission rate for all feedstock oils, in tons;
 - m. the average hourly CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011 and P012, in pounds per hour, calculated as specified in Section A.V.1.b & d; and
 - n. the rolling, 365-day CO and VOC emission rate for P001, P002, P005, P006, P011 and P012, in tons.
10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = [(SFS) - (SCB)] \times (64/32)$$

where:

E = sulfur dioxide emission rate, in pounds per hour;
 SFS = feedstock oil sulfur weight rate, in pounds per hour;
 SCB = carbon black sulfur weight rate, in pounds per hour; 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.

The feedstock oil sulfur weight rate utilized in the equation above is computed in the following manner:

$$SFS = FSR \times SFSP$$

where:

SFS = feedstock oil sulfur weight rate, in pounds per hour;
 FSR = maximum recorded feedstock oil feed rate, in pounds per hour (from A.III.7); and
 SFSP = feedstock oil sulfur content, in weight percent (from A.III.4).

The carbon black sulfur weight rate utilized in the equation above is computed in the following manner:

$$SCB = CBPR \times SCBP$$

where:

SCB = carbon black sulfur weight rate, in pounds per hour;
 CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.a);
 and
 SCBP = carbon black sulfur content, in weight percent (from A.III.5).

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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.
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 rolling, 12-month production rate limitation of 223,000,000 lb/yr carbon black, for emission units P001, P002, P005, P006, P011 and P012.
4. 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 3.0 percent, and the corrective action to bring the sulfur content below 3.0 percent.
5. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the average hourly SO₂ emission rate from emissions units P011 and P012, combined exceeded 337.3 lbs/hr, and the actual average hourly SO₂ emissions for each such day.
6. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the SO₂ emission rate from emission units P011 and P012 combined exceeded 1,477.4 tons, and the actual SO₂ emissions for each such day.
7. 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 eliminate the visible particulate emissions. These reports shall be submitted to the Director (Ohio EPA Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
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;

Emissions Unit ID: P011

- c. the total production from emissions units P001, P002, P005, P006, P011, and P012; and
- d. the total SO₂ emissions (including all calculations), in tons, from emission units P001, P002, P005, P006, P011 and P012 for the previous calendar year.

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

- 9. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling, 12-month emission rates for emissions units P001, P002, P005, P006, P011, and P012, combined, exceeded the rolling 12-month ton per year limits listed in A.I.1.
- 10. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 365-day CO and VOC emission rates from emission units P001, P002, P005, P006, P011 and P012 combined exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual SO₂ emissions for each day the deviation occurs.

V. Testing Requirements

- 1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

- a. **Emission Limitation**

This emissions unit and P012 combined shall be limited to 9.17 lb/hr of PM/PM₁₀ 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 procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 as set forth in "Appendix of Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996.

- b. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 0.5 lb/hr of VOC 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:

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

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Where

E = VOC emission rate from emission 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 emission 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, 1996.

c. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 37.0 lb/hr of NO_x 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_x emission rate from emission units P011 and P012 combined, in pounds per hour.

NEF is the NO_x emission factor per 1,000 gallons of oil burned, 2.14 lbs NO_x/1,000 lbs product, submitted by the permittee based upon their best engineering judgement and

Degussa Corp**PTI Application: 06-06770****Issued****Facility ID: 0684010049**

Emissions Unit ID: P011

knowledge of the process.

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

d. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 0.5 lb/hr of CO 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 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, 1996.

Issued: To be entered upon final issuancee. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 337.3 lb/hr of SO₂ 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.3, A.III.4, A.III.5 and A.III.9; the emission calculation as specified in Section A.III.10; reporting requirement as specified in Section A.IV.5; and testing required in Section A.V.4 below.

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:**

This emissions unit and P012 combined shall be limited to 1,477.4 tpy based upon a rolling, 365-day summation of SO₂ during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the sum of the daily SO₂ emissions on the last day of each year, maintained and recorded as required in Section A.III.9.1, and divided by 2000 lbs/ton. Any exceedance shall be reported as required in Section A.IV.6.

h. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 2.2 tons of CO per year based upon a rolling, 12-month summation during normal operation from the thermal oxidizer:

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operations} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of CO from emission units P011 and P012 combined.

AHEF is the hourly emission factor for emission units P011 and P012 combined, as determined in A.V.1.e, the value of E (lbs CO/hr); until testing is completed as required in Section A.V.4, an emission rate of "4.13 lbs CO/hr" shall be used.

i. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 162.1 tons/yr of NO_x based upon a rolling, 12-month summation during normal operation from the thermal oxidizer:

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operations} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of NO_x from emission units P011 and P012 combined.

AHEF is the hourly emission factor for emission units P011 and P012 combined, as determined in A.V.1.e, the value of E (lbs NO_x/hr); until testing is completed as required in Section A.V.4, an emission rate of "0.5 lbs fNO_x/hr" shall be used.

j. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 36.3 tpy of particulate emissions based upon a rolling, 12-month summation during normal operations.

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Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operations} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of PE from emission units P011 and P012 combined.

AHEF is the hourly emission factor for emission units P011 and P012 combined, as determined in A.V.1.e, the value of E (lbs PE10/hr); until testing is completed as required in Section A.V.4, an emission rate of "9.17 lbs PE/hr" shall be used.

2. Compliance with the operational restrictions in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. **Operational Restriction:**

Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in section A.III.8.

b. **Operational Restriction:**

3.0% sulfur content in the feedstock oil

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in sections A.III.3 and A.III.4.

c. **Operational Restriction:**

84 hrs/yr of start-up and shutdown operations

Degussa Corp

PTI Application: 06-06770

Issued

Facility ID: 0684010049

Emissions Unit ID: P011

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in section A.III.2.

d. **Operational Restriction:**

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

4,545.8 tons of SO₂

392.6 tons of NO_x

84.9 tons of PE

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Applicable Compliance Method:

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

e. **Operational Restriction:**

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

80.4 tons of VOC
2,983 tons of CO

Applicable Compliance Method:

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

3. 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 tpy of SO₂ during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

b. **Emission Limitation:**

4.6 tpy of VOC during start-up/shutdown

Applicable Compliance Method:

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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 tpy 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 tpy of NO_x 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 tpy of particulate emissions during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

f. **Emission Limitation:**

1.9 tpy of H₂S during start-up/shutdown

Applicable Compliance Method:

Degussa Corp**PTI Application: 06-06770****Issued****Facility ID: 0684010049**

Emissions Unit ID: P011

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 tpy of COS during start-up/shutdown

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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 tpy of CS₂ during start-up/shutdown

Applicable 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 tpy of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

4. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. The emission testing shall be conducted within 3 months after issuance of the permit and within 6 months prior to permit expiration.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for particulates, SO₂, 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;
for SO₂, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A; and

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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.

- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

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), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA 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

1. For purposes of this permit to install, normal operations is any time except during startup or shutdown of the emissions unit.

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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

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	OAC rule 3745-31-05(A)(3)	OAC rule 3745-31-05(D)
	40 CFR 52.21	
		OAC rule 3745-17-07(A)
		OAC rule 3745-17-11(B)(1)
		OAC rule 3745-18-06(E)(2)

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PTI A**

Emissions Unit ID: P012

Issued: To be entered upon final issuance

Applicable Emissions Limitations/Control Measures	summation.
The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-31-05(D), and 40 CFR 52.21.	See Section A.I.2.c
See A.I.2.a and A.I.2.b below	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:
	4,545.8 tons of SO ₂ 392.6 tons of NO _x 84.9 tons of PE
Total emissions from this emissions unit and P012 combined shall be limited to the following during normal operation from the thermal oxidizer:	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:
337.3 lbs/hr and 1,477.4 tons/yr of SO ₂ on a rolling 365-day basis.	80.4 tons of VOC 2,983 tons of CO
37.0 lb/hr and 162.1 tons/yr of NO _x based upon a rolling, 12-month summation.	Visible particulate emissions shall not exceed twenty percent opacity, as a six-minute average except as provided by rule.
0.5 lb/hr and 2.2 tons/yr of VOC based upon a rolling, 12-month summation.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
0.5 lbs/hr and 2.2 tons/yr of CO based upon a rolling, 12-month summation.	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/yr of PM/PM ₁₀ based upon a rolling, 12-month	

Issued: To be entered upon final issuance

2. Additional Terms and Conditions

2.a Emissions unit P012 shall be limited to the following emissions during Start-up and Shutdown (vent emissions):

- 3.1 lb/hr and 0.1 TPY of SO₂
- 177 lb/hr and 7.4 TPY of VOC
- 6,621 lb/hr and 278 TPY of CO
- 3.9 lb/hr and 0.2 TPY of NO_x
- 3.8 lb/hr and 0.2 TPY of PM/PM₁₀
- 70 lb/hr and 3.0 TPY of H₂S
- 14 lb/hr and 0.6 TPY of COS

Issued: To be entered upon final issuance32 lb/hr and 1.3 TPY of CS₂

17 lb/hr and 0.7 TPY of HCN

- 2.b** Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation. This emissions unit is currently permitted and operating, and, as such, has existing records of production and emissions, therefore eliminating the need to establish the first year's cumulative rolling 12-month summation carbon black production. The existing, previous 12-month record of the 223,000,000 lb/yr of carbon black shall be maintained as the rolling monthly record, upon the issuance of this permit.
- 2.c** The permittee shall employ good combustion practices to minimize emissions to the extent possible.

II. Operational Restrictions

1. This emissions unit shall
 - a. utilize feedstock oil which contains no more than 3% 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 NO_x.
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 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.

III. Monitoring and/or Recordkeeping Requirements

1. The permittee shall perform daily checks, while the equipment is in operation and when the

Emissions Unit ID: P012

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

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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 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 is in operation;
- b. all downtimes for the monitoring equipment and the associated emissions unit; and

Emissions Unit ID: P012

- 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 emission 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-months); and
 - d. the total hours of operation of this emissions unit.
- * a permanent, rather than monthly record may be maintained for 8.a above
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/gal);
 - 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 carbon black production rate, in pounds per hour for each hour of operation, determined by multiplying the feedstock oil feed rate (gal/hr) by the yield of the feedstock oil (lbs/gal);
 - i. the average hourly sulfur dioxide emission rate for each feedstock oil, in pounds per hour, calculated as specified in Section A.III.10;
 - j. the total hours of operation for each feedstock oil;
 - k. the daily sulfur dioxide emission rate for all feedstock oils, in pounds (i.e., the summation

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- of (i) x (j) for all of the feedstock oils);
- l. the rolling, 365-day SO₂ emission rate for all feedstock oils, in tons;
 - m. the average hourly CO and VOC emission rate for each feedstock oil used in P001, P002, P005, P006, P011 and P012 , in pounds per hour, calculated as specified in Section A.V.1.b & d; and
 - n. the rolling, 365-day CO and VOC emission rate for P001, P002, P005, P006, P011 and P012, in tons.

10. The average hourly sulfur dioxide emission rate for each feedstock oil shall be calculated each day using the following equations:

$$E = [(SFS) - (SCB)] \times (64/32)$$

where:

E = sulfur dioxide emission rate, in pounds per hour;
SFS = feedstock oil sulfur weight rate, in pounds per hour;
SCB = carbon black sulfur weight rate, in pounds per hour; 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.

The feedstock oil sulfur weight rate utilized in the equation above is computed in the following manner:

$$SFS = FSR \times SFSP$$

where:

SFS = feedstock oil sulfur weight rate, in pounds per hour;
FSR = maximum recorded feedstock oil feed rate, in pounds per hour (from A.III.7); and
SFSP = feedstock oil sulfur content, in weight percent (from A.III.4).

The carbon black sulfur weight rate utilized in the equation above is computed in the following manner:

$$SCB = CBPR \times SCBP$$

where:

SCB = carbon black sulfur weight rate, in pounds per hour;
CBPR = maximum recorded carbon black production rate, in pounds per hour (from A.III.8.a);
and
SCBP = carbon black sulfur content, in weight percent (from A.III.5).

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.
2. The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time

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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 rolling, 12-month production rate limitation of 223,000,000 lb/yr carbon black, for emission units P001, P002, P005, P006, P011 and P012.
4. 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 3.0 percent, and the corrective action to bring the sulfur content below 3.0 percent.
5. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the average hourly SO₂ emission rate from emissions units P011 and P012, combined exceeded 337.3 lbs/hr, and the actual average hourly SO₂ emissions for each such day.
6. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the SO₂ emission rate from emission units P011 and P012 combined exceeded 1,477.4 tons, and the actual SO₂ emissions for each such day.
7. 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 eliminate the visible particulate emissions. These reports shall be submitted to the Director (Ohio EPA Southeast District Office) by January 31 and July 31 of each year and shall cover the previous 6-month period.
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; and
 - d. the total SO₂ emissions (including all calculations), in tons, from emission units P001, P002, P005, P006, P011 and P012 for the previous calendar year.

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

Emissions Unit ID: P012

9. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling, 12-month emission rates for emissions units P001, P002, P005, P006, P011, and P012, combined, exceeded the rolling 12-month ton per year limits listed in A.I.1.
10. The permittee shall submit quarterly deviation (excursion) reports that identify each day during which the rolling 365-day CO and VOC emission rates from emission units P001, P002, P005, P006, P011 and P012 combined exceeded 2,983 tons and 80.4 tons respectively. The report shall also include the actual SO₂ emissions for each day the deviation occurs.

V. Testing Requirements

1. Compliance with the emission limitation(s) in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

- a. **Emission Limitation**

This emissions unit and P012 combined shall be limited to 9.17 lb/hr of PM/PM₁₀ 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 procedures specified in 40 CFR Part 60, Appendix A, Methods 1 through 5 as set forth in "Appendix of Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 1996.

- b. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 0.5 lb/hr of VOC 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:

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

Where

E = VOC emission rate from emission 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

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and knowledge of the process.

GOB is the total gallons of oil burned per hour from emission 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, 1996.

c. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 37.0 lb/hr of NO_x 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_x emission rate from emission units P011 and P012 combined, in pounds per hour.

NEF is the NO_x emission factor per 1,000 gallons of oil burned, 2.14 lbs NO_x/1,000 lbs product, submitted by the permittee and based upon their best engineering judgement and knowledge of the process.

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

d. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 0.5 lb/hr of CO during normal

Degus

PTI A

Emissions Unit ID: P012

Issued: To be entered upon final issuance

operation from the thermal oxidizer:

Applicable Compliance Method:

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, 1996.

Issued: To be entered upon final issuancee. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 337.3 lb/hr of SO₂ 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.3, A.III.4, A.III.5 and A.III.9; the emission calculation as specified in Section A.III.10; reporting requirement as specified in Section A.IV.5; and testing required in Section A.V.4 below.

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:**

This emissions unit and P012 combined shall be limited to 1,477.4 tons of SO₂ based upon a rolling, 365-day summation during normal operations.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the sum of the daily SO₂ emissions on the last day of each year, maintained and recorded as required in Section A.III.9.1, and divided by 2000 lbs/ton. Any exceedance shall be reported as required in Section A.IV.6.

h. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 2.2 tons of CO per year based upon a rolling, 12-month summation during normal operation from the thermal oxidizer:

Applicable Compliance Method:

Emissions Unit ID: P012

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operations} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of CO from emission units P011 and P012 combined.

AHEF is the hourly emission factor for emission units P011 and P012 combined, as determined in A.V.1.e, the value of E (lbs CO/hr); until testing is completed as required in Section A.V.4, an emission rate of "4.13 lbs CO/hr" shall be used.

i. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 162.1 tons/yr of NO_x based upon a rolling, 12-month summation during normal operation from the thermal oxidizer:

Applicable Compliance Method:

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

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operations} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of NO_x from emission units P011 and P012 combined.

AHEF is the hourly emission factor for emission units P011 and P012 combined, as determined in A.V.1.e, the value of E (lbs NO_x/hr); until testing is completed as required in Section A.V.4, an emission rate of "0.5 lbs fNO_x/hr" shall be used.

j. **Emission Limitation:**

This emissions unit and P012 combined shall be limited to 36.3 tpy of particulate emissions based upon a rolling, 12-month summation during normal operations.

Applicable Compliance Method:

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

Issued: To be entered upon final issuance

$$E(\text{tpy}) = \text{AHEF} * \text{actual hours of normal operations} * 0.0005 \text{ ton/lb}$$

where

$E(\text{tpy})$ = the ton per year emissions of PE from emission units P011 and P012 combined.

AHEF is the hourly emission factor for emission units P011 and P012 combined, as determined in A.V.1.e, the value of E (lbs PE10/hr); until testing is completed as required in Section A.V.4, an emission rate of "9.17 lbs PE/hr" shall be used.

2. Compliance with the operational restrictions in Section A.I. of these terms and conditions shall be determined in accordance with the following method(s):

a. **Operational Restriction:**

Maximum annual production of carbon black for emission units P001, P002, P005, P006, P011 and P012 combined shall not exceed 223,000,000 pounds on a rolling 12-month summation.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in section A.III.8.

b. **Operational Restriction:**

3.0% sulfur content in the feedstock oil

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in sections A.III.3 and A.III.4.

c. **Operational Restriction:**

84 hrs/yr of start-up and shutdown operations

Applicable Compliance Method:

Compliance shall be demonstrated based upon the recordkeeping requirements specified in section A.III.2.

Degussa Corp

PTI Application: 06-06770

Issued

Facility ID: 0684010049

Emissions Unit ID: P012

d. **Operational Restriction:**

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

4,545.8 tons of SO₂

392.6 tons of NO_x

84.9 tons of PE

Issued: To be entered upon final issuance

Applicable Compliance Method:

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

e. **Operational Restriction:**

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

80.4 tons of VOC
2,983 tons of CO

Applicable Compliance Method:

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

3. 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 tpy of SO₂ during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

b. **Emission Limitation:**

4.6 tpy of VOC during start-up/shutdown

Applicable Compliance Method:

Issued: To be entered upon final issuance

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 tpy 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 tpy of NO_x 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 tpy of particulate emissions during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

f. **Emission Limitation:**

1.9 tpy of H₂S during start-up/shutdown

Applicable Compliance Method:

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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 tpy of COS during start-up/shutdown

Issued: To be entered upon final issuance

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 tpy of CS₂ during start-up/shutdown

Applicable 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 tpy of HCN during start-up/shutdown

Applicable Compliance Method:

Annual emissions shall be calculated using the following equation:

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

4. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
- a. The emission testing shall be conducted within 3 months after issuance of the permit and within 6 months prior to permit expiration.
 - b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rates for particulates, SO₂, 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;
for SO₂, Methods 1 through 4 and Method 6 of 40 CFR Part 60, Appendix A; and

Emissions Unit ID: P012

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.

- d. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

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), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA 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

1. For purposes of this permit to install, normal operations is any time except during startup or shutdown of the emissions unit.

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Emissions Unit ID: P012

Issued: To be entered upon final issuance

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