



Environmental Protection Agency

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

9/4/2012

Certified Mail

Miss. Kristen Capp  
GrafTech International Holdings Inc.  
11709 Madison Ave  
Lakewood, OH 44107

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL  
Facility ID: 1318281215  
Permit Number: P0110951  
Permit Type: Administrative Modification  
County: Cuyahoga

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

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Please complete a survey at [www.epa.ohio.gov/dapc/permitsurvey.aspx](http://www.epa.ohio.gov/dapc/permitsurvey.aspx) and give us feedback on your permitting experience. We value your opinion.

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

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

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. If you have any questions regarding this permit, please contact the Cleveland Division of Air Quality. This permit can be accessed electronically on the Division of Air Pollution Control (DAPC) Web page, [www.epa.ohio.gov/dapc](http://www.epa.ohio.gov/dapc) by clicking the "Issued Air Pollution Control Permits" link.

Sincerely,

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

Cc: U.S. EPA  
CDAQ; Pennsylvania; Canada





**FINAL**

**Division of Air Pollution Control  
Permit-to-Install  
for  
GrafTech International Holdings Inc.**

Facility ID: 1318281215  
Permit Number: P0110951  
Permit Type: Administrative Modification  
Issued: 9/4/2012  
Effective: 9/4/2012





Division of Air Pollution Control
Permit-to-Install
for
GraffTech International Holdings Inc.

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## Authorization

Facility ID: 1318281215  
Facility Description: carbon and graphite products  
Application Number(s): M0001887  
Permit Number: P0110951  
Permit Description: Administrative modification of PTI 13-03054 (emissions unit P018 only) to include monitoring, recordkeeping, and reporting requirements identified in previously issued Title V permit (issued 4/27/2004).  
Permit Type: Administrative Modification  
Permit Fee: \$0.00  
Issue Date: 9/4/2012  
Effective Date: 9/4/2012

This document constitutes issuance to:

GrafTech International Holdings Inc.  
11709 Madison Ave  
Lakewood, OH 44107

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

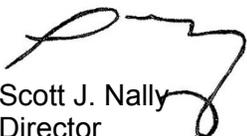
Ohio EPA District Office or local air agency responsible for processing and administering your permit:

Cleveland Division of Air Quality  
2nd Floor  
75 Erievue Plaza  
Cleveland, OH 44114  
(216)664-2297

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

  
Scott J. Nally  
Director



## **Authorization (continued)**

Permit Number: P0110951

Permit Description: Administrative modification of PTI 13-03054 (emissions unit P018 only) to include monitoring, recordkeeping, and reporting requirements identified in previously issued Title V permit (issued 4/27/2004).

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

|                                   |                       |
|-----------------------------------|-----------------------|
| <b>Emissions Unit ID:</b>         | <b>P018</b>           |
| Company Equipment ID:             | East Treatment System |
| Superseded Permit Number:         | 13-03054              |
| General Permit Category and Type: | Not Applicable        |

## **A. Standard Terms and Conditions**

## 1. Federally Enforceable Standard Terms and Conditions

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

## 2. Severability Clause

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

## 3. General Requirements

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

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

#### 4. Monitoring and Related Record Keeping and Reporting Requirements

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

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

## 5. Scheduled Maintenance/Malfunction Reporting

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

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

## 6. Compliance Requirements

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

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

## **7. Best Available Technology**

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

## **8. Air Pollution Nuisance**

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

## **9. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Cleveland Division of Air Quality.
- 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 Cleveland Division of Air Quality. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

## 10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s).

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

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in Ohio EPA's "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update will constitute notifying of the permanent shutdown of the affected emissions unit(s).

- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

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

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

## 12. Permit-To-Operate Application

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

## 13. Construction Compliance Certification

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

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

## 14. Public Disclosure

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

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

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

**16. Fees**

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

**17. Permit Transfers**

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

**18. Risk Management Plans**

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

**19. Title IV Provisions**

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

## **B. Facility-Wide Terms and Conditions**

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
  - a) None.

## **C. Emissions Unit Terms and Conditions**



1. P018, East Treatment System

Operations, Property and/or Equipment Description:

Flexible graphite material treatment system. Company identification is East Material Treatment System. MODIFIED

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
  - (1) None.
- b) Applicable Emissions Limitations and/or Control Requirements
  - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

|    | Applicable Rules/Requirements   | Applicable Emissions Limitations/Control Measures  |
|----|---|--|
| a. | OAC rule 3745-31-05(A)(3)<br><br>(Modified PTI 13-03054 issued 5/13/2003) | Particulate matter (PM) emissions shall not exceed 0.26 pound per hour and 1.14 tons per year (TPY)<br><br>Nitrogen oxide (NOx) emissions shall not exceed 3.57 pounds per hour and 15.64 TPY.<br><br>Sulfur dioxide (SO <sub>2</sub> ) emissions shall not exceed 0.51 pound per hour and 2.23 TPY.<br><br>Carbon monoxide (CO) emissions shall not exceed 17.86 pounds per hour and 78.23 TPY.<br><br>Volatile Organic Compounds (VOC) emissions shall not exceed 0.70 pound per hour and 3.07 TPY.<br><br>Visible particulate emissions shall not exceed 10% opacity as a 6-minute average. |
| c. | OAC rule 3745-17-07(A)  | The visible emission limitation specified by this rule is less stringent than the visible emission limitation established pursuant to OAC rule 3745-31-05(A)(3).   |

|    | Applicable Rules/Requirements  | Applicable Emissions Limitations/Control Measures  |
|----|--|--|
| d. | OAC rule 3745-17-11(B)   | The particulate emission limitation specified by this rule is less stringent than the particulate emission limitation established pursuant to OAC rule 3745-31-05(A)(3).         |
| e. | OAC rule 3745-18-06(E)   | The SO <sub>2</sub> emission limitation specified by this rule is less stringent than the SO <sub>2</sub> emission limitation established pursuant to OAC rule 3745-31-05(A)(3). |
| f. | 40 CFR Part 64<br>Compliance Assurance Monitoring (CAM) for PM emissions | See c)(8), c)(9), d)(8), and e)(3) below.  |

(2) Additional Terms and Conditions

a. The BAT determined for this source consists of control of particulate emissions generated by the conveyor with a 6,370 ACFM cartridge filter dust collector with a particulate emission control efficiency of 99% by weight, control of particulate emissions generated by the dryer by a 8,500 ACFM cyclone and the exhaust of the cyclone together with the emissions of nitrogen oxides generated by the treatment system will be controlled by a 12,500 ACFM wet scrubber with alkaline sodium hydrosulfide solution with an emission scrubbing control efficiency of 65% by weight.

c) Operational Restrictions

(1) The pressure drop across the cartridge filter dust collector shall be maintained at a minimum of 0.25 inch of water column while the emissions unit is in operation (when flake is being fed into the material treatment system). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the emissions unit is in operation (graphite flake being fed).

(2) The permittee shall operate the wet scrubber system at all times in accordance with the following parameters when graphite material is being treated:

a. the pH control systems shall be calibrated weekly and the ORP control systems shall be verified weekly;

b. the scrubbing solution recirculation flow rate to each of the three stages shall not be less than 100 gallons of scrubbing solution per minute (as verified by the record keeping in d)(1)) when flake is being fed into the material treatment system. This parameter shall be maintained and monitored by pressure or flow

- switches located in the discharge line of each recirculation pump. The actuation of this pressure/flow switch at 100 gallons per minute will be checked semiannually;
- c. a total pressure drop across the scrubber system (i.e., all 3 stages) of not less than 1.0 inch water column as measured by Magnehelic or equivalent differential pressure gauge(s) (when flake is being fed into the material treatment system). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the emissions unit is in operation (graphite flake being fed); and,
  - d. the oxidation reduction potential (ORP) of the alkaline sodium hydrosulfide scrubbing solution shall be maintained as defined in c)(5), c)(6), and c)(7).
- (3) The permittee shall burn only natural gas in this emissions unit.
  - (4) The three-stage wet scrubber will be operated under either Process Operating Scenario #1, Process Operating Scenario #2, or Process Operating Scenario #3 described below.
  - (5) For Process Operating Scenario #1, the following operating configuration of the three-stage scrubbing system will be required when the emissions unit is in operation (when flake is being fed into the material treatment system):
    - a. Stage 1 shall be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide. The pH of the scrubbing solution in Stage 1 shall be maintained at 9.0 or greater. The ORP of Stage 1 scrubbing solution shall be maintained at negative 355 or less (i.e., can be more negative). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the acid treat system is in operation (graphite flake being fed).
    - b. Stage 2 shall be operated using a scrubbing solution of sodium hydroxide only. The pH of the scrubbing solution in Stage 2 shall be maintained at 8.0 or greater. The ORP of Stage 2 scrubbing solution is not regulated. This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day).
    - c. Stage 3 shall be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide. The pH of the scrubbing solution in Stage 3 shall be maintained at 9.0 or greater. The ORP of Stage 3 scrubbing solution shall be maintained at negative 275 or less (i.e., can be more negative). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day).
  - (6) For Process Operating Scenario #2, the following operating configuration of the three-stage scrubbing system shall be required when the emissions unit is in operation (when flake is being fed into the material treatment system):
    - a. Stage 1 shall be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide. The pH of the scrubbing solution in Stage 1 shall be maintained at 9.0 or greater. The ORP of Stage 1 scrubbing solution shall be maintained at negative 395 or less (i.e., can be more negative). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day).

- b. Stage 2 shall be operated using a scrubbing solution of sodium chlorite and sodium hydroxide. The pH of the scrubbing solution in Stage 2 shall be maintained at less than 9.0. The ORP of Stage 2 scrubbing solution shall be maintained at positive 300 or greater (i.e., can be more positive). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day).
  - c. Stage 3 shall be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide. The pH of the scrubbing solution in Stage 3 shall be maintained at 9.0 or greater. The ORP of Stage 3 scrubbing solution shall be maintained at negative 335 or less (i.e., can be more negative). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day).
- (7) For Process Operating Scenario #3, the following operating configuration of the 3-stage scrubbing system shall be required when the emissions unit is in operation (i.e., when flake is being fed into the material treatment system):
- a. Stage 1 shall be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide. The pH of the scrubbing solution in Stage 1 shall be maintained at an hourly average of 9.0 or greater. The ORP of Stage 1 scrubbing solution shall be maintained at an hourly average of negative (-) 80 millivolts or less (i.e., can be more negative). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the acid treat system is in operation (graphite flake being fed).
  - b. Stage 2 shall be operated using a scrubbing solution of sodium hydroxide only. The pH of the scrubbing solution in Stage 2 shall be maintained at an hourly average of 8.0 or greater. The ORP of Stage 2 scrubbing solution is not regulated. This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the acid treat system is in operation (graphite flake being fed).
  - c. Stage 3 shall be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide. The pH of the scrubbing solution in Stage 3 shall be maintained at an hourly average of 9.0 or greater. The ORP of Stage 3 scrubbing solution shall be maintained at an hourly average of negative (-) 80 millivolts or less (i.e., can be more negative). This parameter data shall be averaged in 1-hour blocks of time (for a total of 24 blocks per day) while the acid treat system is in operation (graphite flake being fed).
- (8) The static pressure drop for the dust collector system shall be monitored and recorded in 1-hour blocks of time (for a total of 24 blocks per day) while this emissions unit is in operation.
- (9) The pH, static pressure drop, and ORP for the scrubber control system shall be monitored and recorded in 1-hour blocks of time (for a total of 24 blocks per day) while this emissions unit is in operation.

## d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall calibrate, operate, and maintain, in good working condition, systems of monitors, in accordance with the manufacturers' recommendations, with any modifications deemed necessary by the permittee and approved by the Cleveland Division of Air Quality (Cleveland DAQ). The monitoring devices shall be capable of accurately measuring the desired parameters.
- (2) The permittee shall properly operate and maintain equipment to monitor and record the pressure drop across the cartridge filter dust collector when this emissions unit is in operation. The monitoring and recording devices shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and operating manual(s) with any modifications deemed necessary by the permittee. The monitoring devices shall be capable of accurately measuring the desired parameters.
- (3) For each day during which the permittee burns a fuel other than natural gas, the permittee shall maintain a record of the type and quantity of fuel burned in this emissions unit.
- (4) The permittee shall maintain records that document when the scrubber control system is being operated pursuant to Process Operating Scenario #1, Process Operating Scenario #2, or Process Operating Scenario #3.
- (5) The permittee shall record the amount of graphite flake fed into the emissions units, in tons, on a monthly basis.

[Authority for term: OAC rule 3745-77-07(C)(1) and PTI #13-03054]

- (6) The permittee shall collect and record the following information, in averaged 1-hr blocks for the control equipment when the emissions unit is in operation (when graphite flake is being fed into the material treatment process):
  - a. the pH levels of the scrubbing solution in Stages 1, 2, and 3;
  - b. the ORP levels of the scrubbing solution in Stages 1, 2, and 3;
  - c. the total pressure drop readings across the three stages of the scrubber system;
  - d. the scrubbing solution recirculation pressure/flow switch position (i.e., the switch is either "made" or "not made" on Stages 1, 2, and 3. "Made" means the scrubbing solution is flowing); and
  - e. the pressure drop readings across the cartridge filter dust collector.

Due to the automated process control loop of this system, any parameter deviations less than 5 minutes will be considered normal operating conditions and is not recorded as a deviation.

The unit for ORP is either negative or positive millivolts. The unit for pressure drop is inches of water column. The unit for operation of the pressure/flow switches for the scrubbing solution will be recorded as "made" or "not made" ("made" indicates that there is pressure/flow; "not made" indicates that there is no pressure/flow).

- (7) The permittee shall maintain records of the calibrations and verifications for the ORP and pH control systems associated with this emissions unit.
- (8) The CAM plan for this emissions unit has been developed for PM emissions. The CAM performance indicators are as specified in the following tables:
  - a. for the cartridge filter dust collector - pressure drop:

|   |       |
|---|-------|
| Pressure Drop<br>(inches of water column) | 0.25+ |
|---|-------|

- b. for the wet scrubber system (3-stage) - scrubber solution pH, scrubber solution recirculation rate (in GPM), pressure drop, and ORP measured in millivolts:

| pH  | Scrubber Solution Recirculation (GPM) | Pressure Drop (inches of water column) | ORP (mV)   |
|---|---------------------------------------|--|--|
| Scenario 1:<br>Stage 1 9.0+<br>Stage 2 8.0+<br>Stage 3 9.0+<br>Scenario 2:<br>Stage 1 9.0+<br>Stage 2 9.0 or <<br>Stage 3 9.0+<br>Scenario 3:<br>Stage 1 9.0+<br>Stage 2 8.0+<br>Stage 3 9.0+ | 100+                                  | 1+                                     | Scenario 1:<br>Stage 1 -355 or <<br>Stage 3 -275 or <<br>Scenario 2:<br>Stage 1 -395 or <<br>Stage 2 +300 or +<br>Stage 3 -335 or <<br>Scenario 3:<br>Stage 1 -80 or <<br>Stage 3 -80 or < |

The CAM performance indicator range as measured by pressure drop is specified in c)(1) and Table a. of d)(6). When the pressure drops are outside of the indicator range specified in c)(1), corrective action (including, but not limited to, an evaluation of the emissions unit and the control device) will be required.

The CAM performance indicator range as measured by scrubber solution pH, scrubber solution recirculation rate (in GPM), pressure drop, and ORP measured in millivolts is specified in c)(5), c)(6), and c)(7) and Table b. of d)(6). When the pH, scrubber solution recirculation rate, pressure drop, and ORP are outside of the indicator range specified in

c)(5), c)(6), and c)(7), corrective action (including, but not limited to, an evaluation of the emissions unit and the control device) will be required.

Upon detecting an excursion of any of the particulate and/or sulfur dioxide emission indicator ranges listed above, the owner or operator shall restore operation of the emissions unit (including the control devices) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion. Such actions may include initial inspection and evaluation, recording that operation returned to normal without operator action, or any necessary follow-up actions to return operation to within the indicator range.

If a determination is made by the Administrator or Ohio EPA that the permittee has not used acceptable procedures in response to an excursion or exceedance based on the results of a determination made under 40 CFR Part 64.7(d)(2), the permittee may be required to develop a Quality Improvement Plan (QIP) consistent with the requirements of 40 CFR Part 64.8.

e) Reporting Requirements

- (1) The permittee shall submit quarterly written reports to the Cleveland DAQ that identify all deviations (excursions), exceedance(s) and non-compliance periods of time for the following:
  - a. all pH 1-hour block averages\* of Stage 1 scrubbing solution less than 9.0 when in Process Operating Scenario #1, Process Operating Scenario #2, and Process Operating Scenario #3;
  - b. all pH 1-hour block averages\* of Stage 2 scrubbing solution less than 8.0 when in Process Operating Scenario #1, greater than 9.0 when in Process Operating Scenario #2, and less than 8.0 when in Process Operating Scenario #3;
  - c. all pH 1-hour block averages\* of Stage 3 scrubbing solution less than 9.0 when in Process Operating Scenario #1, Process Operating Scenario #2, and Process Operating Scenario #3;
  - d. all ORP 1-hour block averages\* of Stage 1 scrubbing solution greater than negative 355 (more positive than -355) when in Process Operating Scenario #1, greater than negative 395 (more positive than -395) when in Process Operating Scenario #2, and greater than negative 80 (more positive than negative 80) when in Process Operating Scenario #3;
  - e. all ORP 1-hour block averages\* of Stage 2 scrubbing solution less than positive 300 when in Process Operating Scenario #2. ORP for Scenario #1 or Scenario #3 is not regulated;

- f. all ORP readings of Stage 3 scrubbing solution greater than negative 275 (more positive than -275) when in Process Operating Scenario #1, greater than negative 335 (more positive than -335) when in Process Operating Scenario #2, and greater than negative 80 (more positive than negative 80) when in Process Operation Scenario #3;
- g. all 1-hour block averages\* of pressure drop across the three stages of the scrubber system less than 1.0 inch of water column;
- h. all 1-hour block averages\* of pressure drop across the cartridge filter dust collector less than 0.25 inch of water column; and
- i. any 1-hour block average\* where the recirculation pressure/flow switch was "not made" in Stages 1, 2, or 3 (i.e., the scrubbing solution was flowing less than 100 gallons per minute).

\*Any 1-hour block average containing 5 minutes or less of operating time (when flake is being fed) for the entire hour will not be reported as a deviation (excursion).

The quarterly deviation reports shall be submitted in accordance with Standard Terms and Conditions of this permit.

- (2) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in this emissions unit. Each report shall be submitted to the Cleveland DAQ within 30 days after the deviation occurs.
  - (3) If the results of monitoring or record keeping data indicate that the PM emission limitations may have been exceeded, the permittee shall submit the results of that data, and document any corrective action taken to restore operation of the emissions unit, or its control equipment to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The reports shall be submitted in accordance with Standard Terms and Conditions of this permit.
  - (4) Unless other arrangements have been approved by the Director, all notifications and reports shall be submitted through the Ohio EPA's eBusiness Center: Air Services online web portal.
- f) Testing Requirements
- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in b) of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emission Limitation:  
Particulate emissions shall not exceed 0.26 pound per hour and 1.14 TPY.

Applicable Compliance Method:

Compliance with the hourly emission limitation shall be demonstrated based upon the results of the emission testing specified in f)(2).

The annual emission limitation was established by multiplying the hourly particulate emission limitation by the maximum operating schedule of 8760 hours/year, and dividing by 2000 pounds/ton. Therefore, compliance with the annual emission limitation may be assumed provided compliance is maintained with the hourly emission limitation.

b. Emission Limitation:

NO<sub>x</sub> emissions shall not exceed 3.57 pounds per hour and 15.64 TPY.

Applicable Compliance Method:

Compliance with the hourly emission limitation shall be demonstrated based upon the results of the emission testing specified in f)(2).

The annual emission limitation was established by multiplying the hourly particulate emission limitation by the maximum operating schedule of 8760 hours/year, and dividing by 2000 pounds/ton. Therefore, compliance with the annual emission limitation may be assumed provided compliance is maintained with the hourly emission limitation.

c. Emission Limitation:

SO<sub>2</sub> emissions shall not exceed 0.51 pound per hour and 2.23 TPY.

Applicable Compliance Method:

Compliance with the hourly emission limitation shall be demonstrated based upon the results of the emission testing specified in f)(2).

The annual emission limitation was established by multiplying the hourly particulate emission limitation by the maximum operating schedule of 8760 hours/year, and dividing by 2000 pounds/ton. Therefore, compliance with the annual emission limitation may be assumed provided compliance is maintained with the hourly emission limitation.

d. Emission Limitation:

CO emissions shall not exceed 17.86 pounds per hour and 78.23 TPY.

Applicable Compliance Method:

Compliance with the hourly emission limitation shall be demonstrated based upon the results of the emission testing specified in f)(2).

The annual emission limitation was established by multiplying the hourly particulate emission limitation by the maximum operating schedule of 8760 hours/year, and dividing by 2000 pounds/ton. Therefore, compliance with the annual emission limitation may be assumed provided compliance is maintained with the hourly emission limitation.

e. Emission Limitation:

VOC emissions shall not exceed 0.70 pound per hour and 3.07 TPY.

Applicable Compliance Method:

Compliance with the hourly emission limitation shall be demonstrated based upon the results of the emission testing specified in f)(2).

The annual emission limitation was established by multiplying the hourly particulate emission limitation by the maximum operating schedule of 8760 hours/year, and dividing by 2000 pounds/ton. Therefore, compliance with the annual emission limitation may be assumed provided compliance is maintained with the hourly emission limitation.

f. Emission Limitation:

Visible particulate emissions shall not exceed 10% opacity as a 6-minute average.

Applicable Compliance Method:

If required, compliance with the above emission limitation shall be determined through visible particulate emission observations performed in accordance with 40 CFR, Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 374-17-03(B)(1).

- (2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the Title V operating permit.

g) Miscellaneous Requirements

- (1) Emissions unit P018 (scrubber exhaust stack) was most recently performance tested on 5/14/2009 by Air Compliance Testing, Inc. (Job Number: 090505). Emission rates were determined to be the following:

- a. Filterable particulate matter – 0.197 lb/hr
- b. Sulfur dioxide – 0.202 lb/hr
- c. Nitrogen oxide (as NO<sub>2</sub>) – 0.88 lbs/hr
- d. Carbon monoxide – 0.24 lb/hr