Ohio Environmental Protection Agency
John R. Kasich, Governor
Mary Taylor, Lt. Governor
Scott J. Nally, Director

3/11/2011

Certified Mail

No	TOXIC REVIEW
Yes	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

Jennifer Reo
GrafTech International Holdings Inc.
11709 Madison Avenue
Lakewood, OH 44107

RE: DRAFT AIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 1318281215
Permit Number: P0107566
Permit Type: Initial Installation
County: Cuyahoga

Dear Permit Holder:

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

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

and

Cleveland Division of Air Quality
2nd Floor
75 Erieview Plaza
Cleveland, OH 44114

Comments and/or a request for a public hearing will be accepted within 30 days of the date the notice is published in the newspaper. You will be notified in writing if a public hearing is scheduled. A decision on issuing a final permit-to-install will be made after consideration of comments received and oral testimony if a public hearing is conducted. Any permit fee that will be due upon issuance of a final Permit-to-Install is indicated in the Authorization section. Please do not submit any payment now. If you have any questions, please contact Cleveland Division of Air Quality at (216)664-2297.

Sincerely,

Michael W. Ahern

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

Cc: U.S. EPA Region 5 - *Via E-Mail Notification*
CDAQ; Pennsylvania; Canada

STAFF DETERMINATION FOR THE APPLICATION TO CONSTRUCT UNDER THE PREVENTION OF SIGNIFICANT DETERIORATION REGULATIONS FOR GRAFTECH INTERNATIONAL HOLDINGS INC. CUYAHOGA COUNTY, OHIO PTI NUMBER P0107566

The Clean Air Act and regulations promulgated thereunder require that major air pollution sources undergoing construction or modification comply with all applicable Prevention of Significant Deterioration (PSD) provisions and nonattainment area New Source Review requirements. The federal PSD rules govern emission increases in attainment areas for major sources, which are sources with the potential to emit 250 tons per year or more of any pollutant regulated under the Clean Air Act, or 100 tons per year or more if the source is included in one of 28 source categories. In nonattainment areas, the definition of a major source is one having at least 100 tons per year potential emissions. A major modification is one resulting in a contemporaneous increase in emissions which exceeds the significance level of one or more pollutants. Any changes in actual emissions within a five-year period are considered to be contemporaneous. In addition, Ohio now has incorporated the PSD and NSR requirements by rule under OAC 3745-31.

Both PSD and nonattainment rules require that certain analyses be performed before a facility can obtain a permit authorizing construction of a new source or major modification to a major source. The principal requirements of the PSD regulations are as follows:

1) Best Available Control Technology (BACT) review - A detailed engineering review must be performed to ensure that BACT is being installed for the pollutants for which the new source is a major source.

2) Ambient Air Quality Review - An analysis must be completed to ensure the continued maintenance of the National Ambient Air Quality Standards (NAAQS) and that any increases in ambient air pollutant concentrations do not exceed the incremental values set pursuant to the Clean Air Act.

For nonattainment areas, the requirements are:

1) Lowest Achievable Emissions Rate (LAER) - New major sources must install controls that represent the lowest emission levels (highest control efficiency) that have been achieved in practice.

2) The emissions from the new major source must be offset by a reduction of existing emissions of the same pollutant by at least the same amount, and a demonstration must be made that the resulting air quality shows a net air quality benefit. This is more completely described in the Emission Offset Interpretative Ruling as found in Appendix S of 40 CFR Part 51.

3) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing State Implementation Plan (SIP) or are on an approved schedule resulting in full compliance with the SIP.

For rural ozone nonattainment areas, the requirements are:

1) LAER - New major sources must install controls that represent the lowest emissions levels (highest control efficiency) that have been achieved in practice.

2) The facility must certify that all major sources owned or operated in the state by the same entity are either in compliance with the existing SIP or are on an approved schedule resulting in full compliance with the SIP.

Finally, New Source Performance Standards (NSPS), SIP emission standards and public participation requirements must be followed in all cases.

Site/Facility Description

Graftech International Holdings is a graphite manufacturing facility located in Cuyahoga County. Graftech is a Major PSD facility for CO. Cuyahoga County is classified as attainment for all pollutants except PM2.5.

Project Description

GrafTech is proposing to install four (4) new graphite rolling lines, each equipped with a scrubber (to control SO2 and NOx emissions) and a recuperative thermal oxidizer (to control CO and VOC emissions). The facility will restart their west treatment system (equipped with a scrubber to control SO2 and NOx emissions), and will install twelve (12) new graphite furnaces.

Process Description

The company is adding 4 new graphite rolling lines with scrubber and recuperative thermal oxidizer, 1 restarted west treatment system with scrubber, and 12 new graphite furnaces.

Applicable Regulations

Federal Rules

None.

PSD Applicability

Graftech is currently classified as a PSD "major" stationary source for CO. The installation of the graphite furnaces (emissions units P039-P050), rolling lines (emissions units P034-P037), and west treatment system (emissions unit P038), have the potential to generate emissions, prior to operational restrictions, that exceed the PSD significance levels for CO. The company will install a recuperative thermal oxidizer to reduce emissions. However, the net emission increase of CO exceeded the annual significance level of 40 tons. Therefore, this project is considered a major modification for CO and a PSD review was required for that pollutant.

The facility is not subject to PSD regulations for greenhouse gas emissions. The potential to emit for the entire site is 18,755.34 tons per year CO_2 equivalent which is below the threshold specified by U.S. EPA's greenhouse gas tailoring rule as effective on June 3, 2010.

Best Available Control Technology (BACT) Analysis

BACT Review

GrafTech is subject to PSD regulations which mandate a case-by-case BACT analysis be performed for each proposed new or modified emissions unit at which a net increase of CO will occur. Emissions units P034-P037, P038, and P039-P050 require CO BACT analyses. The application used a “top-down” approach to determine an appropriate level of control. As part of the application for any emissions unit regulated under the PSD requirements, an analysis must be conducted that demonstrates that Best Available Control Technology (BACT) will be employed for every affected pollutant.

Summary of BACT Requirements

BACT is defined as an emission limitation for new or modified sources to be achievable on a case-by-case basis while considering the following three factors:

1) Environmental Impact;
2) Energy Impact; and
3) Economic Impact.

The BACT analysis includes air pollution control technologies with the potential to be applied to the emission source for the pollutant under consideration. It is pertinent to point out that BACT must be no less stringent than limitations defined by the standard of a State Implementation Plan, a National Emission Standard for Hazardous Air Pollutants, or a New Source Performance Standard.

The BACT analysis requires a "Top-Down" approach (*NSR Workshop Manual)*, which evaluates the control technology with highest efficiency first, and arrives at the final controls in a 5-step process:

1) Identifying All Applicable Control Technologies;
2) Eliminating Technically Infeasible Control Technologies;
3) Ranking Remaining Control Technologies by Control Effectiveness;
4) Evaluating Cost Effectiveness of Controls and Document Results; and
5) Selecting BACT.

As can be seen from the list above, the final stage of the analysis is the actual selection of the most cost effective air pollution control device. The permitting authority generally sets levels for cost effectiveness. Once a cost-effective control device has been identified for a particular source, that device will be selected as BACT and will be implemented as part of the overall project for that source. If no control systems are deemed to be cost effective, BACT will be no abatement.

PROJECT BACT ANALYSIS

Trinity Consultants, through the BACT analysis methodology as prescribed by the US EPA Air Pollution Control Cost Manual - Sixth Edition, Office of Air Quality Planning and Standards (OAQPS), has submitted a comprehensive Best Available Control Technology (BACT) analysis on the behalf of GrafTech International for the facility’s pending Prevention of Significant Deterioration (PSD) permit application. GrafTech International’s pending project has triggered PSD for the emissions of carbon monoxide (CO). The BACT study was conducted to determine if add on controls would be technically feasible as well as cost effective to control CO emissions.

Trinity Consultants submitted data taken from the RACT/BACT/LAER Clearinghouse (RBLC) database for 29 facilities that shared in processing carbon in some manner and which (in the majority of cases) burned fuel

(natural gas) similar to the operation proposed by GrafTech. Through review of the data submitted, it was found in 14 examples that either no control method was employed or no control method existed in the RBLC database. In nine (9) of the examples, control devices employed, were not necessarily appropriate for the processes proposed by GrafTech. Three (3) examples cited good operating practices, while the remaining three (3) cited employment of specific fuel(s) or usage limitations.

According to Trinity's findings, employment of a Non-Selective Catalytic Reduction (NSCR) unit, SCONOx Catalytic Absorption System, or Xonon Cool Combustion control devices would be technically infeasible because these types of control devices are typically applied to rich-burn engines, power generation turbines, and gas turbine combustors. CDAQ investigated these control technologies and agrees that they would probably not be appropriate to control CO emissions generated by the rolling lines, induction furnaces, and West Acid Treat system. From the information provided, it appears that some type of incineration device could be appropriate to control CO emissions.

After eliminating the control device options listed above, Trinity proposed that installation of a recuperative thermal oxidizer, regenerative thermal oxidizer, or catalytic thermal oxidizer to control CO emissions could be more appropriate. For both the recuperative thermal oxidizer and regenerative thermal oxidizer designs, the RBLC lists afterburners and thermal incinerators for carbon/graphite furnaces. Trinity concluded that while both the recuperative thermal oxidizer and regenerative thermal oxidizer would be technically feasible and highly effective for controlling emissions (95% control efficiency), they would not be cost effective to install these control devices on the induction furnaces and/or West Acid Treat emission units. Trinity also considered the possibility of employing a catalytic thermal oxidizer to control CO emissions from the induction furnaces and West Acid Treat unit. While the addition of this device to a process similar to that of the facility's process was not identified in the RBLC database, it was determined to be potentially feasible but far less efficient (72% control efficiency) and not cost effective, similar to the recuperative thermal oxidizer and regenerative thermal oxidizer. As a result of these findings, for the induction furnaces and West Acid Treat units, Trinity has proposed to "operate and maintain the equipment in accordance with the O&M manual and the manufacturer's recommendations". CDAQ concurs with these findings that there is no control device available at this time that would be appropriate to control emissions from these processes.

To make a clear determination, Trinity reviewed the technical feasibility and cost effectiveness of the following control devices through the "top-down" method, identifying emission control devices that may be appropriate for each process.

Office of Air Quality Planning and Standards (OAQPS) Control Cost Estimates

Graphite Furnaces - Trinity's Findings:

Control Device	Annual Uncontrolled CO Emissions	Annual Reduction of CO Emissions	Total Annual Cost	Cost/ton of pollutant removed	Cost Effective?
Recuperative TO (95% CE)	28.86 TPY Uncontrolled	26 TPY Reduction	$587,037.00	$22,801.00/ton pollutant removed	No
Regenerative TO (95% CE)	28.86 TPY Uncontrolled	27 TPY Reduction	$308,911.00	$11,423.00/ton pollutant removed	No
Catalytic TO (72% CE)	28.86 TPY Uncontrolled	20 TPY Reduction	285,984.00	$14,099.00/ton pollutant removed	No

Graphite Furnaces - CDAQ's Findings:

Control Device	Annual Uncontrolled CO Emissions	Annual Reduction of CO Emissions	Total Annual Cost	Cost/ton of pollutant removed	Cost Effective?
Recuperative TO (95% CE)	28.86 TPY Uncontrolled	27.42 TPY Reduction	$587,801.00	$21,437.00/ton pollutant removed	No
Regenerative TO (95% CE)	28.86 TPY Uncontrolled	27.42 TPY Reduction	$308,911.00	$11,266.00/ton pollutant removed	No
Catalytic TO (72% CE)	28.86 TPY Uncontrolled	20.78 TPY Reduction	258,984.00	$12,463.00/ton pollutant removed	No

Rolling Lines - Trinity's Findings:

Control Device	Annual Uncontrolled CO Emissions	Annual Reduction of CO Emissions	Total Annual Cost	Cost/ton of pollutant removed	Cost Effective?
Recuperative Thermal Oxidizer (95% CE)	77.88 TPY Uncontrolled	73.24 TPY Reduction	$310,159.00	$4,235.00/ton pollutant removed	**Yes**

Rolling Lines - CDAQ's Findings:

Control Device	Annual Uncontrolled CO Emissions	Annual Reduction of CO Emissions	Total Annual Cost	Cost/ton of pollutant removed	Cost Effective?
Recuperative Thermal Oxidizer (95% CE)	77.88 TPY Uncontrolled	74 TPY Reduction	$310,159.00	$4,191.00/ton pollutant removed	**Yes**

West Treatment Trinity's Findings:

Control Device	Annual Uncontrolled CO Emissions	Annual Reduction of CO Emissions	Total Annual Cost	Cost/ton of pollutant removed	Cost Effective?
Recuperative Thermal Oxidizer (95% CE)	84.95 TPY Uncontrolled	74.82 TPY Reduction	$1,736,481.00	$23,207/ton pollutant removed	No
Regenerative Thermal Oxidizer (95% CE)	84.95 TPY Uncontrolled	78.21 TPY Reduction	$927,722.00	$11,862.00/ton pollutant removed	No
Catalytic Thermal Oxidizer (72% CE)	84.95 TPY Uncontrolled	59.02 TPY Reduction	$870,052.00	$14,742.00/ton pollutant removed	No

West Treatment - CDAQ's Findings:

Control Device	Annual Uncontrolled CO Emissions	Annual Reduction of CO Emissions	Total Annual Cost	Cost/ton of pollutant removed	Cost Effective?
Recuperative Thermal Oxidizer (95% CE)	84.95 TPY Uncontrolled	80.7 TPY Reduction	$1,736,481.00	$21,518.00/ton pollutant removed	No
Regenerative Thermal Oxidizer (95% CE)	84.95 TPY Uncontrolled	80.7 TPY Reduction	$927,722.00	$11,496.00/ton pollutant removed	No
Catalytic Thermal Oxidizer (72% CE)	84.95 TPY Uncontrolled	61.2 TPY Reduction	$870,052.00	$14,217.00/ton pollutant removed	No

*Additional control device options were proposed, but only the devices that were determined to be potentially technically feasible and potentially cost effective were evaluated above.

Trinity was asked to explain the variation in total annual costs between the recuperative thermal oxidizer and regenerative thermal oxidizer (listed above) among the three types of emission units.

Trinity responded with the following information: As described in the OAQPS costing manual, the total annual cost of the recuperative oxidizer is largely dependent on a number of key properties of the inlet stream (e.g., flow rate, moisture content, inlet temperature). Because each of these parameters will differ depending on the source from which the waste stream originates, it follows that the total annual cost of a recuperative oxidizer would vary substantially from one emission unit to another. Of particular concern is the total amount of moisture in the waste stream; the relatively high heat capacity of such moist streams will require a greater amount of supplementary natural gas combustion to achieve the specified combustion temperature. The resulting differences in natural gas costs contribute significantly to the differences in total annual cost.

For example, the Induction Furnace waste stream is dry; therefore, the recuperative oxidizer will require much less supplementary natural gas (i.e., 75.16 scfm) than a recuperative oxidizer installed on West Treat (i.e., 266.28 scfm) given that the moisture content of the waste stream from West Treat is estimated at approximately 7.75% by weight. Because this natural gas consumption would constitute a recurring, annual cost, it has a substantial impact on the overall cost effectiveness of the unit.

Trinity was also asked to supply further explanation as to why the total annual control equipment costs, for each of the different control devices evaluated, were much higher for the West Acid Treat unit than for the induction furnaces and rolling lines.

Trinity's response is as follows: As noted above, the waste stream originating from West Treat is inherently wet; therefore, the differences in supplementary natural gas usage will contribute to a majority of the difference in total annual cost between control devices installed on West Treat and on the Induction Furnaces. In contrast, the waste stream from the Rolling Lines is also wet; however, the relatively low flow rate from the Rolling Lines results in a much lower overall amount of moisture in the stream (i.e., 5.8 lb/min of entrained water in the Rolling Line stream, 71.4 lb/min of entrained water in the West Treatment stream). For the reasons described above, this results in greater total annual costs for the control devices installed on West Treat than for those installed on the Rolling Lines.

In conclusion, Trinity has determined that recuperative thermal oxidizers attached to the rolling lines are technically feasible and economically cost effective to control CO emissions. CDAQ agrees with Trinity's assertion that installation of recuperative thermal oxidizers is acceptable as BACT for the rolling lines based on its review of the BACT analysis, emissions data, and calculations therein.

As a side note, according to GrafTech, each rolling line will require a dedicated RTO. The facility states that additional units (induction furnace and west acid treat system) cannot share the same RTO that is controlling the rolling line because the additional unit would interfere with the production process.

Modeling

Modeling Summary

GrafTech is located in AQCR 174 in Cuyahoga County in Lakewood, Ohio. The area is attainment for all criteria pollutants, except PM2.5. U.S. EPA regulations require the establishment of baseline air quality in the vicinity of the proposed project. This is normally accomplished using representative air quality monitoring data. Air quality modeling can be utilized to demonstrate that the project will have less than a threshold impact. This threshold impact is identified as the PSD monitoring de minimus level. If the projected impact from the proposed project exceeds this level, ambient data must be collected or existing representative data must be identified which is representative of the area.

GrafTech has conducted ambient air quality modeling to determine the potential impact due to the proposed permitting action. Ohio EPA has identified representative CO and NOx background concentrations for use by GraftTech in this project. Therefore, GrafTech would not be required to perform preconstruction or post-construction monitoring. The following are the projected impacts:

Pollutant	Modeled Period	Modeled Impact	Monitoring De Minimus
CO	8-hour	1,305 ug/m3	575 ug/m3
NOx	Annual	1,632 ug/m3	14 ug/m3

Modeling Analysis

Air quality dispersion modeling was conducted to assess the effect of this project on the national ambient air quality standards (NAAQS). AERMOD (version 09292) was used in the regulatory default, rural mode. Five years of representative meteorological data (Cleveland surface data and Buffalo, New York upper air data, 2005-2009) were used.

The peak impact of CO was above the respective PSD significant impact levels. Therefore, additional modeling to address NAAQS was necessary.

Pollutant	Averaging Period	Modeled Impact	NAAQS
CO	1-hour	3,068 ug/m3	40,000 ug/m3
CO	8-hour	1,630 ug/m3	10,000 ug/m3

Secondary Impact Analysis

GraftTech conducted the secondary impact analysis for CO which includes the following three categories:

1. Soil and Vegetation:

   No sensitive soil types are known to exist within the SIA of the GraftTech's Lakewood Ohio facility. The NAAQS for all criteria pollutants were designed to protect the public health (primary standards) and welfare (secondary standards) from know or anticipated adverse effects and include a margin of safety. Factors that were considered in designing the standards included vegetation effects, soils effects, and material damage effects. Modeling for the permitting action for the NAAQS analysis indicated that the maximum concentrations for all averaging times were less than each applicable NAAQS and therefore based upon that no adverse effects on soils or vegetation is expected.

2. Related Growth:

   The permitting action allowed is not expected to cause or contribute to related industrial or commercial growth that would be an impact on local ambient air quality.

3. Visibility:

   Visibility impacts for the Class I areas were not calculated because all Class I areas were over 200 km from the GraftTechfacility.

See specific details in permit application.

Conclusions

Based upon the analysis of the permit to install application and its supporting documentation provided by the company, the Ohio EPA staff has determined that the proposed increase will comply with all applicable State and federal environmental regulations and that the requirements for BACT are satisfied. Therefore, the Ohio EPA staff recommends that a permit to install be issued to GrafTech International Holdings.

Cuyahoga County

PUBLIC NOTICE PUBLIC HEARING
ISSUANCE OF DRAFT AIR POLLUTION PERMIT-TO-INSTALL
GrafTech International Holdings Inc.

Issue Date: 3/11/11
Permit Number: P0107566
Permit Type: Initial Installation
Permit Description: Initial Installation of 12 graphite furnaces, 4 graphite rolling lines, and a water treatment system
Facility ID: 1318281215
Facility Location: GrafTech International Holdings Inc.
11709 Madison Avenue
Lakewood, OH 44107
Facility Description: Carbon and Graphite Product Manufacturing

Scott Nally, Director of the Ohio Environmental Protection Agency, 50 West Town Street, Columbus Ohio, has issued a draft action of an air pollution control permit-to-install (PTI) for an air contaminant source at the location identified above on the date indicated. Installation of the air contaminant source may proceed upon final issuance of the PTI.

An information session and public hearing on this permit is scheduled for Thursday, April 14, 2011 at 6:30PM at the Lakewood Public Library – Madison Branch, 13229 Madison Avenue, Lakewood, Ohio 44107. A presiding officer will be present and may limit oral testimony to ensure all parties are heard. Written comments may also be submitted but must be received by the end of the hearing on April 14. Comments received after this date will not be considered a part of the official record.

Comments on this permit, questions, requests for permit applications or other pertinent documentation, and correspondence concerning this action must be directed to David Hearne at Cleveland Department of Public Health, Division of Air Quality, 75 Erieview Plaza, 2nd Floor, Cleveland, Ohio 44114 (216) 664-2297. The permit can be downloaded from the Web page: www.epa.ohio.gov/dapc

Ohio | Environmental Protection Agency

DRAFT

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

Facility ID:	1318281215
Permit Number:	P0107566
Permit Type:	Initial Installation
Issued:	3/11/2011
Effective:	To be entered upon final issuance

Ohio Environmental Protection Agency

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

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Authorization

Facility ID: 1318281215
Facility Description: carbon and graphite products
Application Number(s): A0041157
Permit Number: P0107566
Permit Description: PTI application for 4 new rolling lines with scrubber and recuperative thermal oxidizer, 1 restarted west treatment system with scrubber, and 12 new induction graphitization furnaces.
Permit Type: Initial Installation
Permit Fee: $4,900.00 *DO NOT send payment at this time, subject to change before final issuance*
Issue Date: 3/11/2011
Effective Date: To be entered upon final issuance

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 Erieview 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: P0107566
Permit Description: PTI application for 4 new rolling lines with scrubber and recuperative thermal oxidizer, 1 restarted west treatment system with scrubber, and 12 new induction graphitization furnaces.

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

Emissions Unit ID:	**P038**
Company Equipment ID:	West Treatment System
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

Group Name: Graphite Furnaces 1 through 12

Emissions Unit ID:	**P039**
Company Equipment ID:	IGF 1
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P040**
Company Equipment ID:	IGF 2
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P041**
Company Equipment ID:	IGF 3
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P042**
Company Equipment ID:	IGF 4
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P043**
Company Equipment ID:	IGF 5
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P044**
Company Equipment ID:	IGF 6.
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P045**
Company Equipment ID:	IGF 7
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P046**
Company Equipment ID:	IGF 8
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P047**
Company Equipment ID:	IGF 9
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P048**
Company Equipment ID:	IGF 10
Superseded Permit Number:	

General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P049**
Company Equipment ID:	IGF 11
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P050**
Company Equipment ID:	IGF 12
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable

Group Name: Rolling Lines 7 through 10

Emissions Unit ID:	**P034**
Company Equipment ID:	Rolling Line 7
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P035**
Company Equipment ID:	Rolling Line 8
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P036**
Company Equipment ID:	Rolling Line 9
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
Emissions Unit ID:	**P037**
Company Equipment ID:	Rolling Line 10
Superseded Permit Number:	
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 <u>emission limitations</u>, <u>operational restrictions</u>, <u>and control device operating parameter limitations</u>, 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. P038, West Treatment System

Operations, Property and/or Equipment Description:

West Treatment System

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), as effective 11/30/2001	Particulate Matter (10 microns or less) (PM10) shall not exceed 0.24 pound per hour and 1.03 ton per year (TPY). Nitrogen Oxide (NOx) emissions shall not exceed 0.82 pound per hour and 3.61 TPY. Sulfur dioxide (SO2) emissions shall not exceed 0.24 pound per hour and 1.06 TPY. Volatile Organic Compound (VOC) emissions shall not exceed 0.87 pound per hour and 3.81 TPY. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity, as a six-minute average. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A), OAC rule 3745-17-11(B), and OAC rule 3745-18-06(E). See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/2006	See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
d.	ORC 3704.03(T)	The requirements of this rule are equivalent to the BACT requirements of OAC rule 3745-31-10 through 20 for CO.
e.	OAC rule 3745-31-10 through 20	Carbon Monoxide (CO) emissions shall not exceed 19.40 pounds per hour and 84.95 TPY.
f.	OAC rule 3745-17-07(A)	Visible particulate emissions from the stack serving this emissions unit shall not exceed 20 percent opacity as a six-minute average, except as provided by rule. See b)(2)d.
g.	OAC rule 3745-17-11(B)	Particulate emissions shall not exceed 6.07 pounds per hour. See b)(2)d.
h.	OAC rule 3745-18-06(E)	Sulfur dioxide emissions shall not exceed 29.65 pounds per hour. See b)(2)d.

(2) Additional Terms and Conditions

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

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the SO2 and VOC emissions from this air contaminant source since the uncontrolled potential to emit for SO2 and VOC is each less than 10 tons/year.

c. Permit to Install P0107566 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment), as proposed by the permittee, for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A(3) for NOx and particulate emissions:

i. Three stage wet scrubber (65% control efficiency) to control nitrogen oxide emissions;

ii. 500 ACFM bin vent dust collector filter (airveyor); and

iii. 5,000 ACFM graphite flake conveyor dust collector filter.

d. Until such time the U.S. EPA approves the revision to OAC rule 3745-31-05, the more stringent or equivalent visible emissions, particulate emissions, and sulfur dioxide limits established under OAC rule 3745-31-05(A)(3) shall apply. Upon U.S. EPA approval of the revisions to OAC rule 3745-31-05, the rule based limits under OAC rule 3745-17-07(A), 3745-17-11(B), and 3745-18-06(E) shall go into effect.

c) Operational Restrictions

(1) The permittee shall operate the three stage wet scrubber in the Normal or Alternate Operation configuration.

a. For Process Operating Scenarios A or B, i.e. Normal Operation, the following operating configuration of the three stage scrubbing system will be required:

i. Stage #1 will be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide.

ii. Stage #2 will be operated using a scrubbing solution of sodium hydroxide only.

iii. Stage #3 will be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide.

b. For Process Operating Scenario C, i.e. Alternate Operation, the following operating configuration of the three stage scrubbing system will be required:

i. Stage #1 will be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide.

ii. Stage #2 will be operated using a scrubbing solution of sodium hydroxide and sodium chlorite.

iii. Stage #3 will be operated using a scrubbing solution of sodium hydroxide and sodium hydrosulfide.

(2) The permittee shall burn only natural gas in this emissions unit.

d) Monitoring and/or Recordkeeping Requirements

(1) The acceptable range for the pressure drop across the baghouse shall be based upon the manufacturer's specifications, until such time as any required performance testing is conducted and an alternative pressure drop range and/or limit is established.

(2) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop, in inches of water, across the baghouse when the controlled emissions unit(s) is/are in operation, including periods of startup and shutdown. The permittee shall record the pressure drop across the baghouse on a daily basis. The monitoring equipment 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 acceptable pressure drop shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range is established to demonstrate compliance.

Whenever the monitored value for the pressure drop deviates from the limit or range established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

a. a description of the corrective action;

b. the date corrective action was completed;

c. the date and time the deviation ended;

d. the total period of time (in minutes) during which there was a deviation;

e. the pressure drop readings immediately after the corrective action was implemented; and

f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

This range or limit on the pressure drop across the baghouse is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the permitted limit or range for the pressure drop based upon information obtained during future testing that demonstrate compliance with the allowable particulate emission rate for the controlled emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(3) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the liquid flow rate, and the liquid pH shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

(4) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's pH and flow rate on daily basis. The monitoring equipment 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 acceptable liquid flow rate and the liquid pH shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation

ended. The permittee shall maintain records of the following information for each corrective action taken:

a. a description of the corrective action;

b. the date the corrective action was completed;

c. the date and time the deviation ended;

d. the total period of time (in minutes) during which there was a deviation;

e. the pressure drop, flow rate, and pH readings immediately after the corrective action was implemented; and

f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the CDAQ. The permittee may request revisions to the permitted range or limit for the pressure drop, liquid flow rate, or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable SO2 and NOx emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(5) 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.

e) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. For the baghouse:

i. each period of time (start time and date, and end time and date) when the pressure drop across the baghouse was outside of the range specified by the manufacturer and outside of the acceptable range following any required compliance demonstration;

ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the baghouse;

iii. each incident of deviation described in “i” (above) where a prompt investigation was not conducted;

iv. each incident of deviation described in "i" where prompt corrective action, that would bring the pressure drop into compliance with the acceptable range, was determined to be necessary and was not taken; and

v. each incident of deviation described in "i" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

b. For the wet scrubber:

i. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate, or the liquid pH was outside of the appropriate range or limit specified by the manufacturer and outside of the acceptable range for each parameter following any required compliance demonstration;

ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation and the process emissions were not vented to the scrubber;

iii. each incident of deviation described in "i" or "ii" (above) where a prompt investigation was not conducted;

iv. each incident of deviation described in "i" or "ii" where prompt corrective action, that would bring the pressure drop, liquid flow rate, or scrubber liquid pH into compliance with the acceptable range, was determined to be necessary and was not taken; and

v. each incident of deviation described in "i" or "ii" where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

The quarterly deviation (excursion) reports shall be submitted in accordance with the reporting requirements of the 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 within 30 days after the deviation occurs.

(3) 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 emission limitation(s) in b)(1) of these terms and conditions shall be determined in accordance with the following method(s):

a. <u>Emission Limitation</u>:
PM10 emissions shall not exceed 0.24 pound per hour.
NOx emissions shall not exceed 0.82 pound per hour.

SO2 emissions shall not exceed 0.24 pound per hour
VOC emissions shall not exceed 0.87 pound per hour

Applicable Compliance Method:
Compliance with the hourly emission limitations shall be determined by multiplying the tons of material processed per hour by the emission factor (lb pollutant/ton of material processed) taken from the results of the most recently conducted stack test. Until such time stack testing has been conducted for the West Treatment System, the most recent stack test results (test No.050415 conducted 6/9/2005) from the East Treatment System may be used.

b. Emission Limitation:
PM10 emissions shall not exceed 1.03 TPY.
NOx emissions shall not exceed 3.61 TPY.
SO2 emissions shall not exceed 1.06 TPY.
VOC emissions shall not exceed 3.81 TPY.

Applicable Compliance Method:
The annual emission limitation was established by multiplying the pound per hour allowable for each pollutant by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, provided compliance is maintained with the pounds per hour limitation, compliance with the annual emission limitation shall also be demonstrated.

c. Emission Limitation:
Carbon Monoxide (CO) emissions shall not exceed 19.40 pounds per hour.

Applicable Compliance Method:
Compliance shall be determined using U.S. EPA Methods 1-4 and 10 in accordance with 40 CFR, Part 60, Appendix A.

d. Emission Limitation:
CO emissions shall not exceed 84.95 tons per year.

Applicable Compliance Method:
The annual emission limitation was established by multiplying the pound per hour allowable by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, provided compliance is maintained with the pounds per hour limitation, compliance with the annual emission limitation shall also be demonstrated.

e. Emission Limitation:
Visible particulate emissions from the stack shall not exceed 10 percent opacity or 20 percent opacity (as applicable) as a six-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

No visible emission observations are specifically required to demonstrate compliance with these emission limitations but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A).

f. Emission Limitation:
Particulate emissions shall not exceed 6.07 pounds per hour.

Applicable Compliance Method:
If required, compliance shall be determined using U.S. EPA Methods 1-5 in accordance with 40 CFR, Part 60, Appendix A.

g. Emission Limitation:
Sulfur dioxide emissions shall not exceed 29.65 pounds per hour.

Applicable Compliance Method:
If required, compliance shall be determined using U.S. EPA Methods 1-4 and 6 in accordance with 40 CFR, Part 60, Appendix A.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for CO, in the appropriate averaging period(s).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): U.S. EPA test Method 10 found in 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 Cleveland Division of Air Quality (CDAQ).

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the CDAQ. 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 CDAQ's refusal to accept the results of the emission test(s).

f. Personnel from the CDAQ 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.

g. 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 CDAQ 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 CDAQ.

g) Miscellaneous Requirements

(1) None.

2. Emissions Unit Group - Graphite Furnaces 1 through 12: P039, P040, P041, P042, P043, P044, P045, P046, P047, P048, P049, P050,

EU ID	Operations, Property and/or Equipment Description
P039	Graphite Furnace
P040	Graphite Furnace
P041	Graphite Furnace
P042	Graphite Furnace
P043	Graphite Furnace
P044	Graphite Furnace
P045	Graphite Furnace
P046	Graphite Furnace
P047	Graphite Furnace
P048	Graphite Furnace
P049	Graphite Furnace
P050	Graphite Furnace

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), as effective 11/30/2001	Carbon Monoxide (CO) emissions shall not exceed 218.22 pounds per batch and 4.81 TPY. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a six-minute average. The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A). See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/2006	See b)(2)b.
c.	OAC rule 3745-31-10 through 20	Carbon Monoxide (CO) emissions shall

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		not exceed 218.22 pounds per batch and 4.81 TPY.
d.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed twenty per cent opacity, as a six-minute average. See b)(2)c.
e.	OAC rule 3745-17-11(B)	Particulate emissions shall not exceed 0.551 pound per hour.
f.	OAC rule 3745-18-06(E)	Sulfur dioxide emissions shall not exceed 12.9 pounds per hour.

(2) Additional Terms and Conditions

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

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PM and CO emissions from this air contaminant source since the uncontrolled potential to emit for PM and CO is each less than 10 tons/year.

c. Until such time the U.S. EPA approves the revision to OAC rule 3745-31-05, the more stringent or equivalent visible emissions limit established under OAC rule 3745-31-05(A)(3) shall apply. Upon U.S. EPA approval of the revisions to OAC rule 3745-31-05, the rule based limits under OAC rule 3745-17-07(A) shall go into effect.

c) Operational Restrictions

(1) The maximum annual production rate for emission units P039 through P050 shall not exceed 529 batches.

d) Monitoring and/or Recordkeeping Requirements

(1) The permittee shall maintain monthly records of the number of batches produced in this emissions unit.

e) Reporting Requirements

(1) The permittee shall submit quarterly deviation (excursion) reports that identify the following:

a. any exceedance of the annual production rate limitation

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

(2) 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 emission limitation(s) in b)(1) of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:
CO emissions shall not exceed 218.22 pounds per batch.

Applicable Compliance Method:
The permittee shall demonstrate compliance in accordance with the methodology outlined in permit application A0041157 associated with this permit.

Compliance shall be determined using U.S. EPA Methods 1-4 and 10 in accordance with 40 CFR, Part 60, Appendix A.

b. Emission Limitation:
CO emissions shall not exceed 4.81 tons per year.

Applicable Compliance Method:
The annual emission limitation was developed by multiplying the pounds per batch emission rate by the maximum allowable amount of batches processed per year and dividing by 2000 pounds per ton. Therefore, provided compliance is maintained with the pounds per batch limitation, compliance with the annual emission limitation shall also be demonstrated.

c. Emission Limitation:
Visible particulate emissions from the stack shall not exceed 10 percent opacity or 20 percent opacity (as applicable) as a six-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

No visible emission observations are specifically required to demonstrate compliance with these emission limitations but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A).

d. Emission Limitation:
Particulate emissions shall not exceed 0.551 pound per hour.

Applicable Compliance Method:
If required, compliance shall be determined using U.S. EPA Methods 1-5 in accordance with 40 CFR, Part 60, Appendix A.

e. Emission Limitation:
Sulfur dioxide emissions shall not exceed 12.9 pounds per hour.

Applicable Compliance Method:
If required, compliance shall be determined using U.S. EPA Methods 1-4 and 6 in accordance with 40 CFR, Part 60, Appendix A.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 60 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit.

b. The emission testing shall be conducted to demonstrate compliance with the allowable mass emission rate(s) for CO, in the appropriate averaging period(s).

c. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s): U.S. EPA test Method 10 found in 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 Cleveland Division of Air Quality (CDAQ).

e. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the CDAQ. 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 CDAQ's refusal to accept the results of the emission test(s).

f. Personnel from the CDAQ 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.

g. 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 CDAQ 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 CDAQ.

g) Miscellaneous Requirements

(1) None.

3. Emissions Unit Group - Rolling Lines 7 through 10: P034, P035, P036, P037,

EU ID	Operations, Property and/or Equipment Description
P034	Graphite Rolling Line - equipped with a scrubber and a recuperative thermal oxidizer
P035	Graphite Rolling Line - equipped with a scrubber and a recuperative thermal oxidizer
P036	Graphite Rolling Line - equipped with a scrubber and a recuperative thermal oxidizer
P037	Graphite Rolling Line - equipped with a scrubber and a recuperative thermal oxidizer

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), as effective 11/30/2001	Nitrogen Oxides (NOx) emissions shall not exceed 1.52 lb/hr and 6.64 TPY. Carbon Monoxide (CO) emissions shall not exceed 1.06 lb/hr and 4.64 TPY. Visible particulate emissions from the stack serving this emissions unit shall not exceed 10 percent opacity as a six-minute average. See b)(2)a.
b.	OAC rule 3745-31-05(A)(3)(b), as effective 12/01/2006	See b)(2)b.
c.	OAC rule 3745-31-05(F)	See b)(2)c.
d.	OAC rule 3745-31-10 thru 20	CO emissions shall not exceed 1.06 lb/hr and 4.64 TPY.
e.	OAC rule 3745-17-07(A)	Visible particulate emissions from any stack shall not exceed twenty percent opacity, as a six-minute average, except as provided by rule. See b)(2)d.
f.	OAC rule 3745-17-11(B)	Particulate emissions shall not exceed

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		3.2 pounds per hour.
g.	OAC rule 3745-18-06(E)	Sulfur dioxide (SO_2) emissions shall not exceed 15.6 pounds per hour.

(2) Additional Terms and Conditions

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

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

The Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A)(3) do not apply to the PE and OC/VOC emissions from this air contaminant source since the uncontrolled potential to emit for PE and OC/VOC is each less than 10 tons/year.

c. Permit to Install P0107566 for this air contaminant source takes into account the following voluntary restrictions (including the use of any applicable air pollution control equipment), as proposed by the permittee, for the purpose of avoiding Best Available Technology (BAT) requirements under OAC rule 3745-31-05(A(3):

i. Use of a recuperative thermal oxidizer to control CO emissions (95% control efficiency); and

ii. Use of a three stage wet scrubber to control NOx emissions (65% control efficiency) and sulfur dioxide emissions (99% control efficiency).

d. Until such time the U.S. EPA approves the revision to OAC rule 3745-31-05, the more stringent or equivalent visible emissions established under OAC rule 3745-31-05(A)(3) shall apply. Upon U.S. EPA approval of the revisions to OAC rule 3745-31-05, the rule based limits under OAC rule 3745-17-07(A) shall go into effect.

e. Based on the "Prevention of Significant Deterioration" (PSD) analysis conducted to ensure the application of "Best Available Control Technology" (BACT), it has

been determined that the use of recuperative thermal oxidizer constitutes BACT for this emission unit. The emissions limits based on the BACT requirements are listed under OAC rule 3745-31-(10) through (20) above.

c) Operational Restrictions

(1) The permittee shall burn only natural gas in the furnaces associated with this emissions unit.

(2) The scrubber control system shall be in operation whenever the associated rolling line is in operation (graphite flake is being fed).

(3) The recuperative thermal oxidizer control system shall be in operation whenever the associated rolling line is in operation (graphite flake is being fed).

d) Monitoring and/or Recordkeeping Requirements

(1) 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.

(2) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable range or limit for the pressure drop across the scrubber, the liquid flow rate, and the liquid pH shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

(3) The permittee shall properly install, operate, and maintain equipment to continuously monitor the pressure drop across the scrubber (in pounds per square inch, gauge), the scrubber liquid flow rate (in gallons per minute), and the scrubber liquid pH during operation of this emissions unit, including periods of startup and shutdown. The permittee shall record the pressure drop across the scrubber and the scrubber liquid's pH and flow rate on a daily basis. The monitoring equipment 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 acceptable liquid flow rate and the liquid pH shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate range for each parameter is established to demonstrate compliance.

Whenever the monitored value for any parameter deviates from the range(s) or minimum limit(s) established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the control equipment parameters within the acceptable range(s), or at or above the minimum limit(s) specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

a. a description of the corrective action;

b. the date the corrective action was completed;

c. the date and time the deviation ended;

d. the total period of time (in minutes) during which there was a deviation;

e. the pressure drop, flow rate, and pH readings immediately after the corrective action was implemented; and

f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

(4) These range(s) and/or limit(s) for the pressure drop, liquid flow rate, and pH are effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the Cleveland Division of Air Quality (CDAQ). The permittee may request revisions to the permitted range or limit for the pressure drop, liquid flow rate, or pH based upon information obtained during future performance tests that demonstrate compliance with the allowable NOx emission rate for this/these emissions unit(s). In addition, approved revisions to the range or limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

(5) In order to maintain compliance with the applicable emission limitation(s) contained in this permit, the acceptable combustion temperature within the thermal oxidizer, during any period of time when the emissions unit(s) controlled by the thermal oxidizer is/are in operation, shall not be more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance. Until compliance testing has been conducted, the thermal oxidizer shall be operated and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manual.

(6) The permittee shall properly install, operate, and maintain a continuous temperature monitor and recorder that measures and records the combustion temperature within the thermal oxidizer when the emissions unit(s) is/are in operation, including periods of startup and shutdown. Units shall be in degrees Fahrenheit. The accuracy for each thermocouple, monitor, and recorder shall be guaranteed by the manufacturer to be within $\pm$ 1 percent of the temperature being measured or $\pm$ 5 degrees Fahrenheit,

whichever is greater. The temperature monitor and recorder shall be installed, calibrated, operated, and maintained in accordance with the manufacturer's recommendations, instructions, and the operating manuals, with any modifications deemed necessary by the permittee. The acceptable temperature setting shall be based upon the manufacturer's specifications until such time as any required performance testing is conducted and the appropriate temperature range is established to demonstrate compliance. Following compliance testing, the permittee shall collect and record the following information each day the emissions unit(s) is/are in operation:

a. all 3-hour blocks of time, when the emissions unit(s) controlled by the thermal oxidizer was/were in operation, during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average temperature measured during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance; and

b. a log (date and total time) of the downtime or bypass of the capture (collection) system and thermal oxidizer, and/or downtime of the monitoring equipment, when the associated emissions unit(s) was/were in operation.

These records shall be maintained at the facility for a period of three years.

(7) Whenever the monitored average combustion temperature within the thermal oxidizer deviates from the range or limit established in accordance with this permit, the permittee shall promptly investigate the cause of the deviation. The permittee shall maintain records of the following information for each investigation:

a. the date and time the deviation began;

b. the magnitude of the deviation at that time;

c. the date the investigation was conducted;

d. the name(s) of the personnel who conducted the investigation; and

e. the findings and recommendations.

In response to each required investigation to determine the cause of a deviation, the permittee shall take prompt corrective action to bring the operation of the control equipment within the acceptable range/limit specified in this permit, unless the permittee determines that corrective action is not necessary and documents the reasons for that determination and the date and time the deviation ended. The permittee shall maintain records of the following information for each corrective action taken:

a. a description of the corrective action;

b. the date corrective action was completed;

c. the date and time the deviation ended;

d. the total period of time (in minutes) during which there was a deviation;

e. the temperature readings immediately after the corrective action was implemented; and

f. the name(s) of the personnel who performed the work.

Investigation and records required by this paragraph do not eliminate the need to comply with the requirements of OAC rule 3745-15-06 if it is determined that a malfunction has occurred.

The temperature range/limit is effective for the duration of this permit, unless revisions are requested by the permittee and approved in writing by the CDAQ. The permittee may request revisions to the permitted temperature range/limit based upon information obtained during future performance tests that demonstrate compliance with the allowable emission rate(s) for the controlled pollutant(s). In addition, approved revisions to the temperature range/limit will not constitute a relaxation of the monitoring requirements of this permit and may be incorporated into this permit by means of an administrative modification.

e) Reporting Requirements

(1) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in the emissions unit. Each report shall be submitted to the CDAQ within 30 days after the deviation occurs.

(2) The permittee shall submit quarterly deviation (excursion) reports to the CDAQ that include the following information:

a. For the wet scrubber control system:

i. each period of time (start time and date, and end time and date) when the pressure drop across the scrubber, the liquid flow rate, or the liquid pH was/were outside of the appropriate range or exceeded the applicable limit contained in this permit;

ii. any period of time (start time and date, and end time and date) when the emissions unit(s) was/were in operation (graphite flake is being fed) and the process emissions were not vented to the scrubber;

iii. each incident of deviation described in “i” or “ii” (above) where a prompt investigation was not conducted;

iv. each incident of deviation described in “i” or “ii” where prompt corrective action, that would bring the pressure drop, liquid flow rate, and/or scrubber liquid pH into compliance with the acceptable range, was determined to be necessary and was not taken; and

v. each incident of deviation described in “i” or “ii” where proper records were not maintained for the investigation and/or the corrective action(s), as identified in the monitoring and record keeping requirements of this permit.

b. For the recuperative thermal oxidizer:

i. all 3-hour blocks of time (when the emissions unit(s) was/were in operation) during which the average combustion temperature within the thermal oxidizer was more than 50 degrees Fahrenheit below the average

temperature maintained during the most recent performance test that demonstrated the emissions unit(s) was/were in compliance;

ii. any records of downtime (date and length of time) for the capture (collection) system, the thermal oxidizer, and/or the monitoring equipment when the emissions unit(s) was/were in operation (graphite flake is being fed); and

iii. a log of the operating time for the capture system, thermal oxidizer, monitoring equipment, and the emissions unit(s).

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

(3) 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 emission limitation(s) in b)(1) of these terms and conditions shall be determined in accordance with the following method(s):

a. Hourly Emissions Limitations:
NOx emissions shall not exceed 1.52 lb/hr.
CO emissions shall not exceed 1.06 lb/hr.

Applicable Compliance Method:
The permittee shall demonstrate compliance in accordance with the methodology outlined in permit application A0041157 associated with this permit.

Compliance shall be determined using U.S. EPA Methods 1-4, 7, and 10 in accordance with 40 CFR, Part 60, Appendix A.

b. Annual Emissions Limitations:
NOx emissions shall not exceed 6.64 TPY.
CO emissions shall not exceed 4.64 TPY.

Applicable Compliance Method:
The annual emission limitation was established by multiplying the pound per hour allowable for each pollutant by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, provided compliance is maintained with the pounds per hour limitation, compliance with the annual emission limitation shall also be demonstrated.

c. Emission Limitation:
Visible particulate emissions from the stack shall not exceed 10 percent opacity or 20 percent opacity (as applicable) as a six-minute average.

Applicable Compliance Method:
Compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

No visible emission observations are specifically required to demonstrate compliance with these emission limitations but, if appropriate, may be required pursuant to OAC rule 3745-15-04(A).

d. Emission Limitation:
Particulate emissions shall not exceed 3.2 pounds per hour.

Applicable Compliance Method:
If required, compliance shall be determined using U.S. EPA Methods 1-5 in accordance with 40 CFR, Part 60, Appendix A.

e. Emission Limitation:
SO_2 emissions shall not exceed 15.6 pounds per hour.

Applicable Compliance Method:
If required, compliance shall be determined using U.S. EPA Methods 1-4 and 6 in accordance with 40 CFR, Part 60, Appendix A.

(2) The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

a. The emission testing shall be conducted within 90 days after achieving the maximum production rate at which the emissions unit will be operated, but not later than 180 days after initial startup of the emissions unit

b. The emission testing shall be conducted for the scrubber/recuperative thermal oxidizer control system serving this emissions unit to demonstrate compliance with the NOx and CO emission limitations. (Emissions units P034, P035, P036, and P037 are identical emissions units; therefore, the permittee may test only one of these emissions units and the results will be representative of the emissions for each of the identical emissions units).

c. The following test methods shall be employed to demonstrate compliance with the emission limitations:

i. Methods 1 through 4 and 7 of 40 CFR Part 60, Appendix A for NOx; and

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

Alternative U.S. EPA-approved test methods may be used with prior approval from the Cleveland Division of Air Quality (CDAQ).

d. Test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the CDAQ.

e. The tons of graphite flake fed and the production scenario(s) operated under during the emission testing shall also be recorded.

f. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the CDAQ. 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 CDAQ's refusal to accept the results of the emission test(s).

g. Personnel from the CDAQ 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.

h. 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 CDAQ within 30 days following completion of the tests. The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the CDAQ.

g) Miscellaneous Requirements

(1) None.