



State of Ohio Environmental Protection Agency

**STREET ADDRESS:**

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**MAILING ADDRESS:**

P.O. Box 1049  
Columbus, OH 43216-1049

6/15/2009

**Certified Mail**

Ms. Lynn Beamer  
Ford Motor Company, Cleveland Casting Plant  
18300 Snow Road  
Brook Park, OH 44142

RE: FINAL AIR POLLUTION PERMIT-TO-INSTALL  
Facility ID: 1318120180  
Permit Number: 13-04702  
Permit Type: OAC Chapter 3745-31 Modification  
County: Cuyahoga

No	TOXIC REVIEW
No	PSD
Yes	SYNTHETIC MINOR
No	CEMS
Yes	MACT
No	NSPS
No	NESHAPS
Yes	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED

Dear Permit Holder:

Enclosed please find a final Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully.

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission ("ERAC") under Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and describe the action complained of and the grounds for the appeal. The appeal must be filed with the ERAC within thirty (30) days after notice of the Director's action. A filing fee of \$70.00 must be submitted to the ERAC with the appeal, although the ERAC, has discretion to reduce the amount of the filing fee if you can demonstrate (by affidavit) that payment of the full amount of the fee would cause extreme hardship. If you file an appeal of this action, you must notify Ohio EPA of the filing of the appeal (by providing a copy to the Director) within three (3) days of filing your appeal with the ERAC. Ohio EPA requests that a copy of the appeal also be provided to the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the ERAC at the following address:

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

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. If you have any questions regarding this permit, please contact the Cleveland Division of Air Quality. This permit has been posted to the Division of Air Pollution Control (DAPC) Web page <http://www.epa.state.oh.us/dapc>.

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*  
Cleveland Division of Air Quality

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director





**State of Ohio Environmental Protection Agency  
Division of Air Pollution Control**

**FINAL**

**Air Pollution Permit-to-Install  
for  
Ford Motor Company, Cleveland Casting Plant**

Facility ID: 1318120180  
Permit Number: 13-04702  
Permit Type: OAC Chapter 3745-31 Modification  
Issued: 6/15/2009  
Effective: 6/15/2009





**Air Pollution Permit-to-Install**  
for  
Ford Motor Company, Cleveland Casting Plant

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State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Final Permit-to-Install**  
**Permit Number:** 13-04702  
**Facility ID:** 1318120180  
**Effective Date:** 6/15/2009

## Authorization

Facility ID: 1318120180  
Facility Description: Gray and Ductile Iron Foundry  
Application Number(s): A0009324  
Permit Number: 13-04702  
Permit Description: Modification to cold cure core lines -- P412 and P414.  
Permit Type: OAC Chapter 3745-31 Modification  
Permit Fee: \$2,500.00  
Issue Date: 6/15/2009  
Effective Date: 6/15/2009

This document constitutes issuance to:

Ford Motor Company, Cleveland Casting Plant  
5600 Henry Ford Blvd  
Brook Park, OH 44142-1526

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

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

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

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Chris Korleski  
Director



State of Ohio Environmental Protection Agency  
 Division of Air Pollution Control

**Final Permit-to-Install**  
**Permit Number:** 13-04702  
**Facility ID:** 1318120180  
**Effective Date:** 6/15/2009

## Authorization (continued)

Permit Number: 13-04702  
 Permit Description: Modification to cold cure core lines -- P412 and P414.

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

<b>Emissions Unit ID:</b>	<b>P412</b>
Company Equipment ID:	Core Line 4.6L
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable
<b>Emissions Unit ID:</b>	<b>P414</b>
Company Equipment ID:	NGT (TMEP) Core Line
Superseded Permit Number:	
General Permit Category and Type:	Not Applicable



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Final Permit-to-Install**  
**Permit Number:** 13-04702  
**Facility ID:** 1318120180  
**Effective Date:** 6/15/2009

## **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 its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

## **3. General Requirements**

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



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

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

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



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

d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

## 5. **Scheduled Maintenance/Malfunction Reporting**

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

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

## 6. **Compliance Requirements**

- a) The emissions unit(s) identified in this Permit shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.
- b) Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a responsible official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.
- c) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:



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

## **7. Best Available Technology**

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

## **8. Air Pollution Nuisance**

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

## **9. Reporting Requirements**

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Cleveland Division of Air Quality.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Cleveland Division of Air Quality. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted (i.e.,



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

## **10. Applicability**

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

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

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



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Final Permit-to-Install**  
**Permit Number:** 13-04702  
**Facility ID:** 1318120180  
**Effective Date:** 6/15/2009

**17. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The Cleveland Division of Air Quality must be notified in writing of any transfer of this permit.

**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.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

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



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Final Permit-to-Install**  
**Permit Number:** 13-04702  
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**Effective Date:** 6/15/2009

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.



State of Ohio Environmental Protection Agency  
Division of Air Pollution Control

**Final Permit-to-Install**  
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**Effective Date:** 6/15/2009

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



**1. P412, Core Line 4.6L**

**Operations, Property and/or Equipment Description:**

Core Line 4.6L - The line consists of three sections identified as the water pump/water jacket, side core, and keycore sections. The water pump/water jacket section includes 5 isocure core machines, core sand mixers, core wash station, and core wash dry oven. The side core section includes 3 isocure core machines, core sand mixers, and core wash dry oven. The keycore section includes 12 isocure core machines, core sand mixers, core conveyors, core wash dry oven, bowl cleaning oven, core blow-off station and core assembly station. This terms and conditions for this emissions unit supercede the terms and conditions established in PTI 13-2701 issued on 11/10/1993.

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 operations(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. 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) OAC rule 3745-31-05(D)(1)(a) for the rolling, 12-month OC/VOC limitation.	<p>2.35 lbs of OC/VOC (from resin and catalyst) per ton of cores produced and 107 tons OC/VOC per rolling 12-month period from all isocure core machines and all core wash dry ovens combined.</p> <p>The catalyst gas emissions shall be vented to a catalyst scrubber that is designed and operated to remove at least 98 percent, by weight, of the catalyst gas emissions.</p> <p>Particulate emissions (PE) shall not exceed 0.01 grain per actual cubic foot of total exhaust gases from each of stacks D-45, E-21, and E-22 serving wet scrubbers nos. 4, and 35 through 36, respectively.</p> <p>PE shall not exceed 0.0055 grain per actual cubic foot of exhaust gases from baghouse #78 (D-Unit)</p> <p>Total PE shall not exceed 1.4 lbs/hr or 6.3</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>tons/year.</p> <p>Particulate matter less than 10 microns in diameter (PM-10) shall not exceed 1.24 lbs/hr or 5.46 tons/year.</p> <p>There shall be no visible PE from any stack serving this emissions unit with the exception of stacks D-45, E-21, and E-22 (see b)(2)d. below).</p> <p>The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07(A)(1).</p> <p>See b)(2)c. below.</p>
<b>b.</b>	<b>WATER PUMP/WATER JACKET SECTION:</b>	
<b>i.</b>	<b>5 isocore core machines, controlled by catalyst scrubber no. 10C (also known as 4.6 L catalyst scrubber - east)</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	Visible PE from any stack serving this portion of the emissions unit shall not exceed 20% opacity, as a six-minute average, except as specified by rule.
(c)	OAC rule 3745-21-07(G)(9)(h)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-31-05(A)(3) for control of catalyst gas emissions. (see b)(2)a. and b)(2)f. below)
(d)	Amended OAC rule 3745-21-07(M)	Not applicable. There are no applicable requirements for catalyst emissions.
<b>ii.</b>	<b>core sand mixers, controlled by baghouse no. 78 (also known as D unit baghouse) and wet scrubber no. 4</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
<b>iii.</b>	<b>core wash station</b>	
(a)	OAC rule 3745-21-07(G)(2)	Not applicable. This portion of the emissions unit does not employ, apply, evaporate or dry any photochemically reactive material (PRM), or any substance containing such PRM. Therefore, there are no applicable emission limitations from this rule.
(b)	Amended OAC rule 3745-21-07(M)	Not applicable (see b)(2)g. below).
<b>iv.</b>	<b>indirect heat, natural gas-fired core wash dry oven</b>	
(a)	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/mmBtu of actual heat input
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(1)	Not applicable (see b)(2)b. below).
(d)	OAC rule 3745-21-07(M)(4)	Not applicable (see b)(2)b. below).
<b>c.</b>	<b>SIDE CORE SECTION:</b>	
<b>i.</b>	<b>3 isocure core machines, controlled by catalyst scrubber no. 10C</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	Visible PE from any stack serving this portion of the emissions unit shall not exceed 20% opacity, as a six-minute average, except as specified by rule.
(c)	OAC rule 3745-21-07(G)(9)(h)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-31-05(A)(3) for control of catalyst gas emissions. (see b)(2)a. and b)(2)f. below)
(d)	Amended OAC rule 3745-21-07(M)	Not applicable. There are no applicable requirements for catalyst emissions.
<b>ii.</b>	<b>core sand mixers, controlled by wet scrubbers nos. 35 and 36 (also known as 5-2 and 5-3 wet collectors, respectively) – stacks E-21 and E-22</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(C)	See b)(2)d. below.
<b>iii.</b>	<b>indirect heat, natural gas-fired</b>	



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
	<b>core wash dry oven</b>	
(a)	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/mmBtu of actual heat input
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(1)	Not applicable (see b)(2)b. below).
(d)	OAC rule 3745-21-07(M)(4)	Not applicable (see b)(2)b. below).
<b>d.</b>	<b>KEYCORE SECTION:</b>	
<b>i.</b>	<b>12 isocore core machines, controlled by catalyst scrubbers nos. 10B (also known as 4.6 L catalyst scrubber - west) and 10C</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	Visible PE from any stack serving this portion of the emissions unit shall not exceed 20% opacity, as a six-minute average, except as specified by rule.
(c)	OAC rule 3745-21-07(G)(9)(h)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-31-05(A)(3) for control of catalyst gas emissions. (see b)(2)a. and b)(2)f. below)
(d)	Amended OAC rule 3745-21-07(M)	Not applicable. There are no applicable requirements for catalyst emissions. See b)(2)f. below.
<b>ii.</b>	<b>core sand mixers, controlled by wet scrubbers nos. 35 and 36 – stacks E-21 and E-22</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(C)	See b)(2)d. below.
<b>iii.</b>	<b>core blow-off station, controlled by wet scrubbers nos. 35 and 36 (also known as 5-2 and 5-3 wet collectors, respectively) – stacks E-21 and E-22</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
(b)	OAC rule 3745-17-07(C)	See b)(2)d. below.
<b>iv.</b>	<b>core conveyors</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
<b>v.</b>	<b>indirect heat, natural gas-fired core wash dry oven and bowl cleaning oven core</b>	
(a)	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/mmBtu of actual heat input
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(1)	Not applicable (see b)(2)b. below).
(d)	OAC rule 3745-21-07(M)(4)	Not applicable (see b)(2)b. below).
<b>vi.</b>	<b>core assembly station</b>	
(a)	There are no applicable rules for this portion of the emissions unit.	none
<b>vii.</b>	<b>[for this emissions unit]</b>	
(a)	40 CFR, Part 63, Subpart EEEEE	See Part II of the Ford Casting Title V permit issued on 10/29/2004.

(2) Additional Terms and Conditions

- a. Although OAC rule 3745-21-07(G)(9)(h) specifies an exemption for the use of a phenolic urethane resin binder system in foundry core-making and mold-making operations, the exemption is not yet part of the federally approved SIP. This new exemption was promulgated by Ohio EPA and became effective on June 15, 1999. Ohio EPA has received confirmation from USEPA concerning the acceptability of this exemption, and the permittee has agreed to consider the exemption as federally enforceable during the time from the effective date of this permit to the effective date of USEPA approval of the exemption as a revision to the Ohio SIP for ozone.
- b. Only drying occurs in the core wash and bowl cleaning ovens; no baking, heat curing or heat polymerization occurs. Therefore, OAC rules 3745-21-07(G)(1) and 3745-21-07(M)(4) are not applicable to these ovens.
- c. The allowable PM-10 emission rates were calculated by multiplying the allowable PE rates by a factor of 0.873. This factor was developed by PEI Associates for Ohio EPA State Implementation Plan development.

- d. Pursuant to the provisions of OAC rule 3745-17-07(C), the permittee is hereby granted the following equivalent visible particulate emission limitations for stacks E-21 and E-22 (scrubbers 35 and 36, respectively), serving this emissions unit, in lieu of the 20% and 60% opacity limitations as specified in OAC rule 3745-17-07(A)(1)(a) and (A)(1)(b).

Except as otherwise provided below and in OAC rule 3745-17-07(A)(2) and (A)(3), the permittee shall not cause or allow the discharge into the ambient air from stacks E-21 and E-22, serving this emissions unit, any visible particulate emissions greater than 57% and 25% opacity, respectively, as a six-minute average.

Except as otherwise specified in OAC rule 3745-17-07(A)(2) and (A)(3), the permittee may cause or allow the discharge into the ambient air from stacks E-21 and E-22, serving this emissions unit, visible particulate emissions exceeding 57% opacity, as a six-minute average for stack E-21, and 25% opacity, as a six-minute average for stack E-22, for not more than six consecutive minutes in any sixty minutes, but shall not exceed 63% opacity, as six-minute average, for stack E-21, and 60% opacity, as a six-minute average, for stack E-22, at any time.

- e. The particulate emissions from this emissions unit shall be vented to the baghouse and wet scrubbers serving this emissions unit. There are no fugitive dust emissions associated with this emissions unit.
- f. On February 18, 2008, OAC rule 3745-21-07 was revised in its entirety; therefore, the 21-07 rule that was in effect prior to this date is no longer part of the State regulations. On April 4, 2008, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-07, the requirement to comply with the previous 21-07 rule provisions still exists as part of the federally-approved SIP for Ohio. The following terms and conditions shall become void after U.S. EPA approves the rule revision:
- b)(1)b.i.(c), b)(1)c.i.(c), b)(1)d.i.(c), and b)(2)a.
- g. There are no applicable requirements from amended OAC rule 3745-21-07(M) for the core wash station, because there is no control device needed for this portion of the emissions unit.

c) Operational Restrictions

- (1) The pressure drop across each of scrubbers numbers 4 and 35 through 36 shall be maintained within a range of 4 to 8 inches of water column at all times while the emissions unit is in operation.
- (2) The scrubber water pump motor amperage for each of scrubbers numbers 35 through 36 shall be maintained at or above 15 amps while the emissions unit is in operation.
- (3) The scrubber water pump motor amperage for scrubber no. 4 shall be maintained at or above 20 amps, at all times while the emissions unit is in operation.



- (4) The permittee shall maintain the pH of the acid solution in scrubbers numbers 10B and 10C at a pH no greater than 4.5.
  - (5) The permittee shall burn only natural gas or LPG or propane as backup fuels in the core wash dry ovens and bowl cleaning oven of this emissions unit.
  - (6) This emissions unit has been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of the cores produced, upon issuance of this permit. The permittee shall produce no more than 91,000 tons of cores per year, as a rolling, 12-month summation.
- d) Monitoring and/or Recordkeeping Requirements
- (1) The permittee shall perform weekly checks for the baghouse and monthly checks for the scrubbers, when the emissions unit is in operation and when the weather conditions allow, for any visible emissions from the baghouse and scrubbers serving this emissions unit and for any visible fugitive emissions escaping from the building containing this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
    - a. the color of the emissions;
    - b. whether the emissions are representative of normal operations;
    - c. if the emissions are not representative of normal operations, the cause of the abnormal visible emissions;
    - d. the total duration of any visible emission incident; and
    - e. any corrective actions taken to eliminate the visible emissions.
  - (2) The permittee shall properly operate and maintain equipment to continuously monitor the static pressure drop across each scrubber and the scrubber water pump motor amperage for each scrubber while the emissions unit is in operation. The monitoring devices and any recorders shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals.

The permittee shall collect and record the following information for each scrubber once for each day the emissions unit is in operation:

    - a. the pressure drop across the scrubber, in inches of water column; and
    - b. the scrubber water pump motor amperage.
  - (3) The permittee shall collect and record, for each control system, the downtime of the capture (collection) system, control device, and monitoring equipment for each day the emissions unit was in operation.
  - (4) The permittee shall operate and maintain equipment to monitor the pH of the scrubber liquor for scrubbers nos. 10B and 10C when the emissions unit is in operation. The pH monitor shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s). The



permittee shall collect and record the pH of the acid solution in scrubbers nos. 10B and 10C, once for each day the emissions unit is in operation.

- (5) For each day during which the permittee burns a fuel other than natural gas or LPG or Propane as backup fuel in any of the core wash dry ovens or the bowl cleaning oven of this emissions unit, the permittee shall maintain a record to the type and quantity of the fuel burned.
- (6) The permittee shall maintain monthly records of the total tons of cores produced. The permittee shall also maintain monthly records of the rolling, twelve-month summation of the tons of cores produced. This shall be calculated by adding the tons of cores produced for the preceding 11 calendar months plus the tons of cores produced for the current calendar month.

e) Reporting Requirements

- (1) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouse and scrubber serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Cleveland Division of Air Quality by February 15 and August 15 of each year and shall cover the previous 6-month period.
- (2) The permittee shall submit quarterly deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained within the required ranges for each scrubber:
  - a. the static pressure drop across the scrubber; and
  - b. the scrubber water pump motor amperage.
- (3) The permittee shall submit quarterly written deviation (excursion) reports that identify all periods of time during which the pH of the acid solution in scrubbers numbers 10B or 10C was not maintained below the level specified in c)(4) of these terms and conditions.
- (4) The permittee shall submit quarterly reports, for each control system, containing the daily downtimes for the capture (collection) system, control device, and monitoring equipment when the emissions unit was in operation. These reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall include the previous calendar quarter.
- (5) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in any of the core wash dry ovens or bowl cleaning oven of this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.
- (6) The permittee shall submit written deviation (excursion) reports that identify any monthly record indicating that the annual cores produced restriction (as a rolling, 12-month summation) was exceeded, as well as the corrective actions that were taken to achieve compliance.



f) Testing Requirements

(1) Compliance with the emission limitations in b)(1) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible PE from stacks D-45, E-21 (57% opacity EVEL) and E-22 (25% opacity EVEL) serving this emissions unit shall not exceed 20% opacity, as a six-minute average, except as specified by rule.

Applicable Compliance Method:

Compliance with the above visible PE limitation shall be determined by the method specified in OAC rule 3745-17-03(B)(1).

b. Emission Limitation:

PE shall not exceed 0.01 grain per dry standard cubic foot of total exhaust gases from each of stacks D-45, E-21 and E-22 serving wet scrubbers numbers 4, and 35 through 36.

Applicable Compliance Method:

Compliance with the above PE limitation shall be determined by testing using Methods 1 through 5 of 40 CFR, Part 60, Appendix A.

c. Emission Limitation:

There shall be no visible PE from any stack serving this emissions unit with the exceptions of stacks D-45, E-21, and E-22.

Applicable Compliance Method:

Compliance with the above visible PE limitation shall be determined by Method 22 of 40 CFR, Part 60, Appendix A.

d. Emission Limitations:

PE shall not exceed 1.4 lbs/hr or 6.3 tons/year.

Applicable Compliance Method:

Compliance with the above hourly PE limitation shall be determined by testing using Methods 1 through 5 of 40 CFR, Part 60, Appendix A. Compliance with the above annual PE limitation shall be determined by multiplying the test results (lbs/hr) by the annual number of hours of operation for this emissions unit and dividing by 2,000.

e. Emission Limitations:

PM-10 shall not exceed 1.24 lbs/hr and 5.46 tons/year.



Applicable Compliance Method:

Compliance with the above hourly PM-10 limitation shall be determined by testing using Methods 1 through 4 and Method 201 of 40 CFR, Part 51, Appendix M. Compliance with the above annual PM-10 limitation shall be determined by multiplying the test results (lbs/hr) by the annual number of hours of operation and dividing by 2,000.

f. Emission Limitations:

2.35 lbs of OC/VOC per ton of cores produced; 107 tons of OC/VOC per rolling, 12-month period from all isocure core machines and all core wash dry ovens combined

Applicable Compliance Method:

The permittee shall demonstrate compliance with the annual allowable emission rate by using the following equation:

$$\text{OC/VOC emissions} = (\text{EF}) \times (\text{A}) / (2000 \text{ lbs/ton})$$

where,

- i. EF = the OC/VOC emission factor, in lbs OC/VOC per ton of cores produced = 1.84 lbs OC/VOC from resins per ton of cores produced + 0.51 lb OC/VOC from catalyst per ton of cores produced = 2.35 lbs OC/VOC per ton of cores produced (determined from September 2005 stack test)
- ii. for the annual emission rate, A = the actual tons of cores produced per rolling 12-month period

If required, the permittee also shall demonstrate compliance with the lb/ton OC emission limitation by performing emission tests in accordance with Methods 1 thru 4, and 18, 25 or 25A, as appropriate, of 40 CFR, Part 60, Appendix A.

g. Emission Limitation:

0.020 lb of PE/mmBtu of actual heat input

Applicable Compliance Method:

Compliance with the above PE limitation shall be determined by testing using Methods 1 through 5 of 40 CFR, Part 60, Appendix A, or using an appropriate USEPA AP-42 emission factor.

h. Emission Limitation:

The catalyst gas emissions shall be vented to a catalyst scrubber that is designed and operated to remove at least 98 percent, by weight, of the catalyst gas emissions.



Applicable Compliance Method:

Compliance with the above control requirement shall be determined by stack testing of the inlet and outlet streams of the scrubber using Method 18 of 40 CFR, Part 60, Appendix A. The results shall be used in the following equation:

control efficiency = [(inlet catalyst emission rate - outlet catalyst emission rate) / inlet catalyst emission rate] x 100%.

i. Emission Limitation:

PE shall not exceed 0.0055 grain per actual cubic foot of exhaust gases from baghouse #78 (D-Unit)

Applicable Compliance Method:

Compliance with the above PE limitation shall be determined by testing using Methods 1 through 5 of 40 CFR, Part 60, Appendix A. The emission testing requirements for this emissions unit are specified in Part II of the Ford Casting Title V permit issued on 10/29/2004.

g) Miscellaneous Requirements

- (1) For emissions unit P412, it is necessary to establish a Synthetic Minor limit along with the Netting. Ford Casting has accepted an operating restriction on this core line to produce no more than 91,000 tons of cores per year as a rolling, 12-month summation. Using the stack test emission factor of 2.35 lbs OC/VOC per ton of cores produced equates to 107 tpy OC/VOC. For this emissions unit, there were no emission reductions that occurred in the five year contemporaneous window. However, Ford Casting has committed to ramp down operations for emissions units P055, P056, P064, P066, P095, P101, P106 (hot), and P107. Contemporaneous emissions increases include emissions units P056, P101, and P106 (cold-cure). The baseline actual emissions for P055, P056, P064, P066, P095, P101, P106 (hot), and P107 was determined to be 358 tons/yr OC/VOC. Allowing for an increase of 39 tons/yr OC/VOC for P412 and P106 as a single project installed in the same year creates a total cap for all ten emissions units at 397 tons/yr OC/VOC. With the ramp down of the noted emissions units during the ramping up of P412, the emissions increase does not exceed the major modification threshold. Ford Casting shall not violate the combined cap OC/VOC emission limitation or the OC/VOC emissions from P412 will be subject to Nonattainment New Source Review.
- (2) This permit modification is being processed in accordance with the Findings & Orders issued to Ford Casting in July 2008.



**2. P414, NGT (TMEP) Core Line**

**Operations, Property and/or Equipment Description:**

NGT (TMEP) Core Line - The line consists of three sections identified as the water pump/water jacket/slab, side core, and keycore sections as well as a 50-ton sand bin. The water pump/water jacket/slab section includes 5 isocure core machines, core sand mixers, and core wash dry oven. The side core section includes 3 isocure core machines, core sand mixers, and core wash dry oven. The keycore section includes 21 isocure core machines, core sand mixers, core conveyors, core wash dry oven, bowl cleaning oven, and core assembly station. This terms and conditions for this emissions unit supercede the terms and conditions established in PTI 13-3094 issued on 7/21/1999.

- 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 operations(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. 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) OAC rule 3745-31-05(D)(1)(a) for the rolling, 12-month OC/VOC limitation.	<p>The catalyst gas emissions shall be vented to a catalyst scrubber that is designed and operated to remove at least 98 percent, by weight, of the catalyst gas emissions.</p> <p>2.35 lbs of OC/VOC (from resin and catalyst) per ton of cores produced and 162 tons OC/VOC per rolling 12-month period from all isocure core machines and all core wash dry ovens combined.</p> <p>Visible particulate emissions (PE) from any stack serving this emissions unit shall not exceed 5% opacity, as a six-minute average.</p> <p>PE from each of stacks D-45, H-73, K-11, K-13, and J-62 serving wet scrubber no. 4, baghouse no. 15, baghouse no. 130, baghouse no. 131, and baghouse no. 128, respectively, shall not exceed 0.01 grain per actual cubic foot of total exhaust gases.</p>



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		0.67 lb of PE/hr, 1.28 tons of PE/year  0.58 lb of particulate matter less than 10 microns in diameter (PM-10)/hr, 1.12 tons of PM10/year  See b)(2)b. and b)(2)d. below.
<b>b.</b>	<b>WATER PUMP/WATER JACKET/SLAB SECTION:</b>	
<b>i.</b>	<b>5 isocure core machines, controlled by catalyst scrubber no. 132 (also known as TMEP catalyst scrubber)</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(9)(h)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-31-05(A)(3) for control of catalyst gas emissions. (see b)(2)a. and b)(2)h. below)
(d)	Amended OAC rule 3745-21-07(M)	Not applicable. There are no applicable requirements for catalyst gas emissions.
<b>ii.</b>	<b>core sand mixers, controlled by baghouses nos. 130 and 131 (also known as TMEP baghouse – south and TMEP baghouse - north, respectively) and baghouse no. 15</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
<b>iii.</b>	<b>indirect heat, natural gas-fired core wash dry oven</b>	
(a)	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/mmBtu of actual heat input
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(1)	Not applicable (see b)(2)f. below).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
(d)	Amended OAC rule 3745-21-07(M)(4)	Not applicable (see b)(2)f. below).
<b>c.</b>	<b>SIDE CORE SECTION:</b>	
<b>i.</b>	<b>3 isocore core machines, controlled by catalyst scrubber no. 132 (also known as TMEP catalyst scrubber)</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(9)(h)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-31-05(A)(3) for control of catalyst gas emissions. (see b)(2)a. and b)(2)h. below)
(d)	Amended OAC rule 3745-21-07(M)	Not applicable. There are no applicable requirements for catalyst gas emissions.
<b>ii.</b>	<b>core sand mixers, controlled by baghouses nos. 15, 130 and 131</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
<b>iii.</b>	<b>indirect heat, natural gas-fired core wash dry oven</b>	
(a)	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/mmBtu of actual heat input
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(1)	Not applicable (see b)(2)f. below).
(d)	Amended OAC rule 3745-21-07(M)(4)	Not applicable (see b)(2)f. below).
<b>d.</b>	<b>KEYCORE SECTION:</b>	
<b>i.</b>	<b>21 isocore core machines ( 7 are keycore machines) for a total of 7 cells, controlled by catalyst scrubber nos. 132 (also known as TMEP catalyst scrubber) and 10</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(9)(h)	The requirements of this rule are equivalent to the requirements of OAC rule 3745-31-05(A)(3) for control of catalyst gas emissions. (see b)(2)a. and b)(2)h. below)
(d)	Amended OAC rule 3745-21-07(M)	Not applicable. There are no applicable requirements for catalyst gas emissions.
<b>ii.</b>	<b>core sand mixers, controlled by baghouses nos. 15, 130 and 131</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
<b>iii.</b>	<b>core conveyors</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
<b>iv.</b>	<b>indirect heat, natural gas fired core wash dry oven and bowl cleaning oven</b>	
(a)	OAC rule 3745-17-10(B)(1)	0.020 lb of PE/mmBtu of actual heat input
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
(c)	OAC rule 3745-21-07(G)(1)	Not applicable (see b)(2)f. below).
(d)	Amended OAC rule 3745-21-07(M)(4)	Not applicable (see b)(2)f. below)
<b>v.</b>	<b>core assembly station</b>	
(a)	none	none
<b>e.</b>	<b>50-TON SAND BIN</b>	
<b>i.</b>	<b>50-ton sand bin, controlled by baghouse no. 128 (also known as TMEP 50-ton bin dust collector)</b>	
(a)	OAC rule 3745-17-11(B)(1)	The PE limitation established in this rule is less stringent than the limitations established pursuant to OAC rule 3745-31-05(A)(3).



	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
(b)	OAC rule 3745-17-07(A)(1)	The visible PE limitation in this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
<b>f.</b>	<b>[for this emissions unit]</b>	
i.	40 CFR, Part 63, Subpart EEEEE	See Part II of the Ford Casting Title V permit issued on 10/29/2004.

(2) Additional Terms and Conditions

- a. Although OAC rule 3745-21-07(G)(9)(h) specifies an exemption for the use of a phenolic urethane resin binder system in foundry core-making and mold-making operations, the exemption is not yet part of the federally approved SIP. This new exemption was promulgated by Ohio EPA and became effective on June 15, 1999. Ohio EPA has received confirmation from USEPA concerning the acceptability of this exemption, and the permittee has agreed to consider the exemption as federally enforceable during the time from the effective date of this permit to the effective date of USEPA approval of the exemption as a revision to the Ohio SIP for ozone.
- b. The allowable PM-10 emission rates were calculated by multiplying the allowable PE rates by a factor of 0.873. This factor was developed by PEI Associates for Ohio EPA State Implementation Plan development.
- c. The permittee shall employ only water-based, non-photochemically reactive core wash in the core wash stations.
- d. Emissions from some portions of this emissions unit are captured and vented to wet scrubber no. 4, baghouse no. 15, baghouse no. 130, baghouse no. 131 and baghouse no. 128, which are served by stacks D-45, H-73, K-11, K-13 and J-62, respectively. Other emissions from portions of emissions units not listed in this permit are also captured and vented to the above-mentioned control equipment. The hourly PE limitations were developed based on the percentage of air flow contribution of each portion of this emissions unit to each control equipment multiplied by the allowable concentration for each control equipment.
- e. The permittee shall employ procedures for unloading, handling and disposal of the dust collected in the baghouses so that it does not get airborne and does not accumulate underneath the baghouses. Any accumulation of dust under any of the baghouses or on any part of the roof or floor near the baghouses shall be deemed a violation of this condition.
- f. Only drying occurs in the core wash and bowl cleaning ovens; no baking, heat curing, or heat polymerization occurs. Therefore, OAC rules 3745-21-07(G)(1) and 3745-21-07(M)(4) are not applicable to these ovens.
- g. The particulate emissions from this emissions unit shall be vented to the baghouses and scrubber serving this emissions unit. There are no fugitive dust emissions associated with this emissions unit.



h. On February 18, 2008, OAC rule 3745-21-07 was revised in its entirety; therefore, the 21-07 rule that was in effect prior to this date is no longer part of the State regulations. On April 4, 2008, the rule revision was submitted to the U.S. EPA as a revision to Ohio's State Implementation Plan (SIP); however, until the U.S. EPA approves the revision to OAC rule 3745-21-07, the requirement to comply with the previous 21-07 rule provisions still exists as part of the federally-approved SIP for Ohio. The following terms and conditions shall become void after U.S. EPA approves the rule revision:

b)(1)b.i.(c), b)(1)c.i.(c), b)(1)d.i.(c), b)(2)a., and b)(2)c.

c) Operational Restrictions

- (1) This emissions unit has been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of the cores produced, upon issuance of this permit. The permittee shall produce no more than 137,900 tons of cores per year, as a rolling, 12-month summation.
- (2) The permittee shall maintain the pH of the acid solution in scrubber numbers 132 and 10 at a pH of no greater than 4.5.
- (3) The permittee shall burn only natural gas in the core wash dry ovens and bowl cleaning oven.

d) Monitoring and/or Recordkeeping Requirements

- (1) The permittee shall perform weekly checks, when the emissions unit is in operation and when the weather conditions allow, for any visible PE from the baghouses serving this emissions unit. The presence or absence of any visible emissions shall be noted in an operations log. If visible emissions are observed, the permittee shall also note the following in the operations log:
  - a. the location and color of the emissions;
  - b. whether the emissions are representative of normal operations;
  - c. if the emissions are not representative of normal operations, the cause of the abnormal visible emissions;
  - d. the total duration of any visible emission incident; and
  - e. any corrective actions taken to eliminate the visible emissions.
- (2) The permittee shall collect and record, for each control system, the downtimes of the capture (collection) system, control device, and monitoring equipment for each day the emissions unit was in operation.
- (3) The permittee shall operate and maintain equipment to monitor the pH of the scrubber liquor for scrubber no.132 and 10 when the emissions unit is in operation. The pH monitor shall be calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions, and/or operating manual(s). The permittee shall collect and record the pH of the acid solution in scrubber nos.132 and 10, once for each day the emissions unit is in operation.



- (4) The permittee shall maintain monthly records of the total tons of cores produced. The permittee shall also maintain monthly records of the rolling, twelve-month summation of the tons of cores produced. This shall be calculated by adding the tons of cores produced for the preceding 11 calendar months plus the tons of cores produced for the current calendar month.
  - (5) For each day during which the permittee burns a fuel other than natural gas in any of the core wash dry ovens or the bowl cleaning oven of this emissions unit, the permittee shall maintain a record to the type and quantity of the fuel burned.
  - (6) Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the monitoring and record keeping requirements specified in d)(1) through d)(5) are as stringent as or more stringent than the monitoring and record keeping requirements contained in PTI 13-3094, issued on September 18, 1996 and modified on July 21, 1999. The monitoring and record keeping requirements contained in the above-referenced PTI are subsumed into the monitoring and record keeping requirements of this permit, so that compliance with these requirements constitutes compliance with the underlying monitoring and record keeping requirements in the PTI.
- e) Reporting Requirements
- (1) The permittee shall submit semiannual written reports that (a) identify all days during which any visible particulate emissions were observed from the baghouses serving this emissions unit and (b) describe any corrective actions taken to eliminate the visible particulate emissions. These reports shall be submitted to the Cleveland Division of Air Quality by February 15 and August 15 of each year and shall cover the previous 6-month period.
  - (2) The deviation (excursion) reports shall be submitted in accordance with the requirements specified in the Standard Terms and Conditions, except that they shall be submitted by February 15, May 15, August 15, and November 15 of each year.
  - (3) The permittee shall submit quarterly reports, for each control system, containing the daily downtimes for the capture (collection) system, control device, and monitoring equipment when the emissions unit was in operation. These reports shall be submitted by February 15, May 15, August 15, and November 15 of each year and shall include the previous calendar quarter.
  - (4) The permittee shall submit quarterly written deviation (excursion) reports that identify all periods of time during which the pH of the acid solution in scrubber nos. 132 and 10 was not maintained below the level specified in c)(2) of these terms and conditions.
  - (5) The permittee shall submit written deviation (excursion) reports that identify any monthly record indicating that the annual core production restriction (as a rolling, 12-month summation) was exceeded, as well as the corrective actions that were taken to achieve compliance.
  - (6) The permittee shall submit deviation (excursion) reports that identify each day when a fuel other than natural gas was burned in any of the core wash dry ovens or bowl cleaning oven of this emissions unit. Each report shall be submitted within 30 days after the deviation occurs.



(7) Pursuant to OAC rule 3745-77-07(A)(3)(a)(ii), the reporting requirements specified in e)(1) through e)(6) are as stringent as or more stringent than the reporting requirements contained in PTI 13-3094, issued on September 18, 1996 and modified on July 21, 1999. The reporting requirements contained in the above-referenced PTI are subsumed into the reporting requirements of this permit, so that compliance with these requirements constitutes compliance with the underlying reporting requirements in the PTI.

f) Testing Requirements

(1) Compliance with the emission limitations and the control efficiency limitation in b)(1) and the operational restrictions in c) of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitation:

Visible PE from any stack serving this emissions unit shall not exceed 5% opacity, as a six-minute average.

Applicable Compliance Method:

Compliance with the above visible PE limitation shall be determined by Method 9 of 40 CFR, Part 60, Appendix A.

b. Control Requirement:

The catalyst gas emissions shall be vented to a catalyst scrubber that is designed and operated to remove at least 98 percent, by weight, of the catalyst gas emissions.

Applicable Compliance Method:

Compliance with the above control requirement shall be determined by stack testing of the inlet and outlet streams of the scrubber using Methods 1 through 4 and Method 18 of 40 CFR, Part 60, Appendix A. The results shall be used in the following equation:

$$\text{control efficiency} = \frac{[(\text{inlet catalyst emission rate} - \text{outlet catalyst emission rate}) / \text{inlet catalyst emission rate}] \times 100\%}{}$$

c. Emission Limitation:

PE from each of stacks D-45, K-11, K-13, and J-62 serving wet scrubber no. 4, baghouse no. 130, baghouse no. 131, and baghouse no. 128, respectively, shall not exceed 0.01 grain/dry standard cubic foot of total exhaust gases.

Applicable Compliance Method:

Compliance with the above PE limitation shall be determined by testing using Methods 1 through 5 of 40 CFR, Part 60, Appendix A.

d. Emission Limitations:

0.67 lb of PE/hr, 1.28 tons of PE/year



Applicable Compliance Method:

Compliance with the above hourly PE limitation shall be determined by testing using Methods 1 through 5 of 40 CFR, Part 60, Appendix A. Compliance with the above annual PE limitation shall be determined by multiplying the test results (lbs/hr) by the annual number of hours of operation of this emissions unit and dividing by 2,000.

e. Emission Limitations:

0.58 lb of PM-10/hr, 1.12 tons of PM-10/year

Applicable Compliance Method:

Compliance with the above hourly PM-10 limitation shall be determined by testing using Methods 1 through 4 and Method 201 of 40 CFR, Part 51, Appendix M. Compliance with the above annual PM-10 limitation shall be determined by multiplying the test results (lbs/hr) by the annual number of hours of operation of this emissions unit and dividing by 2,000.

f. Emission Limitation:

Emissions of OC/VOC shall be limited to 2.35 lbs of OC/VOC per ton of cores produced and 162 tons per rolling 12-month period from all isocure core machines and all core wash dry ovens combined.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the annual allowable emission rate by using the following equation:

$$\text{OC/VOC emissions} = (\text{EF}) \times (\text{A}) / (2000 \text{ lbs/ton})$$

Where,

- i. EF = the OC/VOC emission factor, in lbs OC/VOC per ton of cores produced = 1.84 lbs OC/VOC from resins per ton of cores produced + 0.51 lb OC/VOC from catalyst per ton of cores produced = 2.35 lbs OC/VOC per ton of cores produced (determined from September 2005 stack test)
- ii. for the rolling, 12-month emission rate, A = the actual tons of cores produced per rolling, 12-month period

If required, the permittee also shall demonstrate compliance with the lb/ton OC emission limitation by performing emission tests in accordance with Methods 1 thru 4, and 18, 25 or 25A, as appropriate, of 40 CFR, Part 60, Appendix A.

g. Emission Limitation:

0.020 lb of PE/mmBtu of actual heat input



Applicable Compliance Method:

Compliance with the above PE limitation shall be determined by either testing using Method 5 of 40 CFR, Part 60, Appendix A, or using an appropriate USEPA AP-42 emission factor.

- (2) The emission testing requirements for this emissions unit are specified in Part II of the Ford Casting Title V permit issued on 10/29/2004.

g) Miscellaneous Requirements

- (1) For emissions unit P414, it is necessary to re-establish a Synthetic Minor limit along with the Netting. Ford Casting has accepted an operating restriction on this core line to produce no more than 137,900 tons of cores per year as a rolling, 12-month summation. Using the stack test emission factor of 2.35 lbs OC/VOC per ton of cores produced equates to 162 tpy OC/VOC. PTI 13-3094 allowed the use of emission reduction credits for the shutdown of emissions units P094, P104, and P053 for a total of 125.5 tpy OC/VOC.

Net Change = 162 tpy – 125.5 tpy = 36.5 tpy OC/VOC increase which is below the major modification threshold

- (2) This permit modification is being processed in accordance with the Findings & Orders issued to Ford Casting in July 2008.