



TO: Interested Parties / Applicant

RE: Interstate Castings / F097-18317-00063

FROM: Felicia A. Robinson
Administrator

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within fifteen (15) calendar days of the receipt of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Indianapolis Office of Environmental Services, Air Permits at (317) 327-2234.

Enclosures



Air Quality Hotline: 317-327-4AIR | knozone.com

Department of Public Works
Office of Environmental Services

2700 Belmont Avenue
Indianapolis, IN 46221

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FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) RENEWAL

Indiana Department of Environmental Management Office of Air Quality and City of Indianapolis, Office of Environmental Services

**Interstate Castings
3823 Massachusetts Avenue
Indianapolis, Indiana 46218**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provision of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; and denial of a permit renewal application. 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 conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses new source review requirements and is intended to fulfill the new source review procedures and permit revision requirements pursuant to 326 IAC 2-8-11.1, applicable to those conditions.

Operation Permit No.: F097-18317-00063	
Issued by:	Issuance Date: April 16, 2007
Original Signed by Felicia A. Robinson	Expiration Date: April 16, 2012
Felicia A. Robinson, Administrator Office of Environmental Services	



Air Quality Hotline: 317-327-4AIR | knozone.com

**Department of Public Works
Office of Environmental Services**

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and Indianapolis Office of Environmental Services (OES). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary Gray & Ductile Iron Foundry.

Source Address:	3823 Massachusetts Ave. Indianapolis, Indiana 46218
Mailing Address:	3823 Massachusetts Ave. Indianapolis, Indiana 46218
General Source Phone:	317-546-2427
SIC Code:	3321
County Location:	Marion County
Source Location Status:	Nonattainment for Ozone under the 8-hr standard and PM _{2.5}
Source Status:	Attainment for all other criteria pollutants Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD Rule, Emission Offset, and Nonattainment NSR Minor Source, section 112 of the Clean Air Act 1 of 28 source categories

A.2 Emission Unit and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

This stationary source consists of the following emission units and pollution control devices:

- (a) Melt Operations, installed in 1972, consisting of the following:
- (1) Two (2) electric induction furnaces, collectively identified as EU-01, with emissions collected by a canopy hood located directly over the furnaces and controlled by a settling tank followed by a cyclone which exhausts through one stack identified as stack B. Only one furnace can be operated at any time because there is only one transformer to supply electrical energy;
 - (2) One (1) charge handling system, identified as EU-02, with a maximum charge capacity of 5 tons of metal per hour. The maximum capacity of the charge handling system is limited by the source's ability to melt metal;
 - (3) One (1) natural gas preheater, identified as EU-03, with a maximum heat input capacity of 25 million Btu per hour; and
 - (4) One (1) reaction/holding ladle, identified as EU-04, where inoculation takes place.

Emissions from the charge handling system, preheater, and holding ladle are collected by the general furnace area ventilation system that exhausts through two uncontrolled stacks identified as stacks V11 and V12.

- (b) Pouring and Cooling Operations, collectively identified as EU-05, where the molten metal from the melting operation are poured from ladles into molds and allowed to cool. These facilities were installed in the 1930s and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located on the ceiling above the pouring deck and exhaust through uncontrolled stacks V17, V18, V26, V27, and V28.

- (c) Shakeout Operations, collectively identified as EU-06A, where the molding sand is separated from the casting by mechanical shaking. These units were installed in 1972 and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located over the shakeout area and controlled by a cyclone, identified as CE-C, in series with a dust collector, identified as CE-A; exhausting through stack A.
- (d) Casting Cleaning Operations, collectively identified as EU-06B, with a maximum throughput of 5 tons of metal per hour, consisting of the following:
 - (1) One (1) table blast installed in 1981;
 - (2) One (1) shot blast machine installed in June 1960;
 - (3) Five (5) grinders installed in 1960; and
 - (4) One (1) cutoff saw installed in 1981.

Emissions are collected by various hoods located throughout the casting cleaning operation and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

- (e) Sand Handling Operations, collectively identified as EU-06C, installed prior to 1967 and modified in 1998 and in 2000, with a maximum capacity of 20.63 tons of sand per hour, consisting of the following:
 - (1) One (1) sand muller;
 - (2) Thirteen (13) hopper stations;
 - (3) One (1) sand elevator;
 - (4) One (1) sand tank;
 - (5) One (1) sand cooler;
 - (6) Seven (7) belts;
 - (7) One (1) molding line consisting of a B & P 16 X 20 mold machine, constructed in 2002, with a maximum production capacity of 80 molds per hour, each mold weighing 140 pounds; and
 - (8) One (1) molding line consisting of a Sinto FB03 20 X 24 mold machine, constructed in 1998, with a maximum production capacity of 80 molds per hour, each mold weighing 240 pounds.

Emissions are collected by various hoods located throughout the sand handling process line and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

- (f) Core Making Operations consisting of the following three (3) core making processes:
 - (1) Two (2) Redford shell core machines identified as EU-09A and EU-09B, each with a maximum capacity 35.75 pounds of shell sand per hour and constructed in February 2002;
 - (2) One (1) air set core making process, identified as EU-07, constructed in 1982, with a maximum operating capacity of 0.5 tons of cores per hour. In the air set core making process, sand, catalyst, and resin are blended together in a sand mixer. Following blending, the blended sand is placed in the core boxes. Cores

are then formed into the desired shape in the core machine. If required, the cores are placed in the core oven in order to harden the cores. The air set core oven is fired with natural gas and has a maximum heat input capacity of 0.115 million Btu per hour; and

- (3) One (1) oil sand core making process, identified as EU-08, constructed in 1958, with a maximum operating capacity of 0.05 tons of cores per hour. In the oil core making process, sand and core oil are blended together in a sand mixer and placed in core molds to produce the desired shape. If required, the oil cores are then baked in a core oven in order to harden and strengthen the cores. The oil sand core oven is fired with natural gas and has a maximum heat input capacity of 1.6 million Btu per hour.

Emissions are collected by building ventilation hoods located in the core making area and exhaust through uncontrolled stacks V4, V5, and V38.

A.3 Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities as defined in 326 IAC 2-7-1(21):

- (a) Old Conference Room Boiler, with a heat input capacity of 0.106 MMBtu/hr. [326 IAC 6.5-1-2(b)(3)]
- (b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1]
- (c) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.
 - (1) Woodworking operation consisting of one (1) bandsaw and one (1) oscillating vertical sand. The emissions from this operation are controlled by a dust collector with a design flow rate of 55 cubic feet per minute. [326 IAC 6.5-1]
- (d) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]
- (e) Space heaters, process heaters, or boilers using the following fuels.
 - (1) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (A) Core Oven, with a heat input capacity of 1.6 MMBtu/hr.
 - (B) Maintenance West Space Heater, with a heat input capacity of 0.225 MMBtu/hr.
 - (C) Maintenance East Space Heater, with a heat input capacity of 0.225 MMBtu/hr.
 - (D) Chipping Booth Space Heater, with a heat input capacity of 0.2 MMBtu/hr.
 - (E) Old Dock Space Heater, with a heat input capacity of 0.4 MMBtu/hr.
 - (F) Maintenance Shower Room Furnace, with a heat input capacity of 0.125 MMBtu/hr.
 - (G) Airset Oven, with a heat input capacity of 0.115 MMBtu/hr.
 - (H) Airset Torpedo, with a heat input capacity of 0.4 MMBtu/hr.
 - (I) Airset Torpedo, with a heat input capacity of 0.4 MMBtu/hr.
 - (J) Bull Ladle Torch -2", with a heat input capacity of 0.279 MMBtu/hr.
 - (K) Control Room Furnace, with a heat input capacity of 0.125 MMBtu/hr.

- (L) Core Dip Drying Table Infra-red, with a heat input capacity of 0.048 MMBtu/hr.
- (M) Ladle Torch 2" Floor Molding, with a heat input capacity of 0.279 MMBtu/hr.
- (N) Ladle Torch 2" Floor Molding, with a heat input capacity of 0.279 MMBtu/hr.
- (O) Ladle Torch 2" Floor Molding, with a heat input capacity of 0.279 MMBtu/hr.
- (P) Bull Ladle Torch -2", with a heat input capacity of 0.279 MMBtu/hr.
- (Q) Heavy Chip Torpedo, with a heat input capacity of 0.4 MMBtu/hr.
- (R) Shipping Office North Infra-red, with a heat input capacity of 0.014 MMBtu/hr.
- (S) Shipping Office South Infra-red, with a heat input capacity of 0.014 MMBtu/hr.
- (T) Core Assembly Table Heater, with a heat input capacity of 0.014 MMBtu/hr.
- (U) Muller Trash Chute Torch, with a heat input capacity of 0.005 MMBtu/hr.
- (V) Muller Gearbox Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (W) Muller Manifold Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (X) Compressor Water Manifold Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (Y) Air-set room space heater, with a heat input capacity of 0.15 MMBtu/hr.
- (Z) Air-set room Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (AA) Air-set room Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (BB) Air-set conveyor Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (CC) Air-set conveyor Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (DD) Air-set conveyor Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (EE) Core Room Core Prep Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (FF) Bench Core Table Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (GG) Bench Core Table Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (HH) Core Assembly Table Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (II) Air-set Core & Mold assembly Table Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (JJ) Air-set Core & Mold assembly Table Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (KK) Air-set Mold Assembly Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (LL) Air-set Mold Assembly Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (MM) Sinto Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (NN) Sinto Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (OO) #9 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (PP) #9 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (QQ) Molding Line Setup Table Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (RR) #8 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (SS) #8 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (TT) #7 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (UU) #7 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.

- (VV) #6 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (WW) #6 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (XX) #5 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (YY) #5 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (ZZ) #4 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (AAA) #4 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (BBB) #3 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (CCC) #3 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (DDD) #1 Molding Machine Infra-red (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (EEE) #1 Molding Machine Infra-red (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (FFF) Ladle Prep Area Sink Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (GGG) #2 Stand Grinder Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (HHH) #1 Stand Grinder Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (III) Brinell Tester Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (JJJ) Single Pedestal Dual Wheel Grinder Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (KKK) Floor Molding Rollaround Triple Unit Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (LLL) Floor Molding North Station Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (MMM) Floor Molding South Station Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (NNN) Floor Molding Water Barell Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (OOO) Floor Molding Simpson Muller Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (2) Propane or liquified petroleum gas or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.
 - (A) Payloader, 61 HP
 - (B) Hand Torch unit for mold drying, 0.3 MMBtu/hr
- (3) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing less than five-tenths (0.5) percent sulfur by weight.
 - (A) Dayton Salamader, 0.6 MMBtu/hr
 - (B) Dayton Salamader, 0.055 MMBtu/hr
- (f) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hour, except where total capacity of equipment operated by one stationary source exceeds 2,000,000 Btu/hour.

- (g) Combustion source flame safety purging on startup.
- (h) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.
- (i) The following VOC and HAP storage containers:
 - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.
 - (2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.
- (j) Closed loop heating and cooling systems.
- (k) Infrared cure equipment.
- (l) Noncontact cooling tower systems with forced and induced draft cooling tower system not regulated under a NESHAP.
- (m) Replacement or repair of electrostatic precipitators bags in baghouses and filters in other air filtration equipment.
- (n) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (o) A laboratory as defined in 326 IAC 2-7-1(21)(D).

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2, and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5] [IC 13-15-3-6(a)]

- (a) This permit, F097-18317-00063, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-8-6]

- (a) Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, and Indianapolis Office of Environmental Services, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.
- (b) Unless otherwise stated, all terms and conditions in this permit that are local requirements, including any provisions designed to limit the source's potential to emit, are enforceable by Indianapolis Office of Environmental Services.

B.5 Severability [326 IAC 2-8-4(4)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

This permit does not convey any property rights of any sort, or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

- (a) The Permittee shall furnish to IDEM, OAQ, and Indianapolis Office of Environmental Services, within a reasonable time, any information that IDEM, OAQ, and Indianapolis Office of Environmental Services, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ, and Indianapolis Office of Environmental Services, copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1 when furnishing copies of

requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ, and Indianapolis Office of Environmental Services, may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.9 Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)] [326 IAC 2-8-5(1)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an authorized individual of truth, accuracy, and completeness. This certification, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An authorized individual is defined at 326 IAC 2-1.1-1(1).

B.10 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than April 15 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and Indianapolis Office of Environmental Services, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

- (5) Such other facts as specified in Sections D of this permit, IDEM, OAQ, and Indianapolis Office of Environmental Services, may require to determine the compliance status of the source.

The notification which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.11 Preventive Maintenance Plan 326 IAC 1-6-3] [326 IAC 2-8-4(9)] [326 IAC 2-8-5(a)(1)]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:
 - (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ, and Indianapolis Office of Environmental Services, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ, and Indianapolis Office of Environmental Services. IDEM, OAQ, and Indianapolis Office of Environmental Services, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1-1(1).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Emergency Provisions [326 IAC 2-8-12]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describes the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, and Indianapolis Office of Environmental Services, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone No.: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section) or,
Telephone No.: 317-233-0178 (ask for Compliance Section)
Facsimile No.: 317-233-6865
Telephone No.: 317-327-2234 (ask for OES Air Compliance Section)
Facsimile No.: 317-327-2274

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
 - (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ, and Indianapolis Office of Environmental Services, may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
 - (f) Failure to notify IDEM, OAQ, and Indianapolis Office of Environmental Services, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.

- (g) Operations may continue during an emergency only if the following conditions are met:
- (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
 - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
 - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.
- Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to F097-18317-00063 and issued pursuant to permitting programs approved into the state implementation plan have been either
- (1) incorporated as originally stated,
 - (2) revised,
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9] [326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provision), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-8-4(5)(C)] [326 IAC 2-8-7(a)] [326 IAC 2-8-8]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ or Indianapolis Office of Environmental Services, determines any of the following:
 - (1) That this permit contains a material mistake.
 - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
 - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAQ, and Indianapolis Office of Environmental Services, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, and Indianapolis Office of Environmental Services, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, and Indianapolis Office of Environmental Services, may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.17 Permit Renewal [326 IAC 2-8-3(h)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and Indianapolis Office of Environmental Services, and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue

Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

- (b) A timely renewal application is one that is:
- (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and Indianapolis Office of Environmental Services, on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ, and Indianapolis Office of Environmental Services, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, and Indianapolis Office of Environmental Services, any additional information identified as being needed to process the application.

B.18 Permit Amendment or Revision [326 IAC 2-8-10] [326 IAC 2-8-11.1]

- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Permits
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement the administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.19 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

- (a) The Permittee may make any change or changes at this source that are described in 326 IAC 2-8-15(b) through (d), without prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-8-11.1 has been obtained;
- (3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

- (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Permits
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emissions trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ, and Indianapolis Office of Environmental Services, in the notices specified in 326 IAC 2-8-15(b)(2), (c)(1), and (d).

- (b) **Emission Trades [326 IAC 2-8-15(c)]**
The Permittee may trade emission increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).
- (c) **Alternative Operating Scenarios [326 IAC 2-8-15(d)]**
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ or U.S. EPA is required.
- (d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-8-11.1]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-8-11.1.

B.21 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC13-30-3-1]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, and Indianapolis Office of Environmental Services, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

- (a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Permits
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

The application which shall be submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment change immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-8-4(6)] [326 IAC 2-8-16][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.
- (b) Failure to pay may result in administrative enforcement action, or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emissions Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

- (a) Pursuant to 326 IAC 2-8:
- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period. This limitation shall also make the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.
 - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and
 - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.
- (b) The potential to emit particulate matter from the entire source shall be limited to less than one-hundred (100) tons per twelve (12) consecutive month period.
- (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.
- (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

C.6 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on December 5, 2006. The plan is included as Attachment A.

C.7 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.

C.8 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Asbestos Section
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1 emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

C.9 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ, and Indianapolis Office of Environmental Services, not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, and Indianapolis Office of Environmental Services, if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.10 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

C.11 Compliance Monitoring [326 IAC 2-8-4(3)] [326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to the equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Permits
270 South Belmont Avenue
Indianapolis, IN 46221-2009

in writing prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by an "authorization individual" as defined by 326 IAC 2-1.1-1(1).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a permit revision shall be implemented when operation begins.

C.12 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63 or other approved methods as specified in this permit.

C.13 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-8-4(3)] [326 IAC 2-8-5(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale

- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

C.14 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on September 7, 1988.
- (b) Upon direct notification by IDEM, OAQ, and Indianapolis Office of Environmental Services, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.15 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.16 Response to Excursions or Exceedances [326 IAC 2-8-4] [326 IAC 2-8-5]

-
- (a) Upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
 - (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
 - (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records;
 - (3) inspection of the control device, associated capture system, and the process.
 - (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
 - (e) The Permittee shall maintain the following records:
 - (1) monitoring data;

- (2) monitor performance data, if applicable; and
- (3) corrective actions taken.

C.17 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.18 General Record Keeping Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner or Indianapolis Office of Environmental Services, makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner or Indianapolis Office of Environmental Services, within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.19 General Reporting Requirements [326 IAC 2-8-4(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. This report shall be submitted within thirty (30) days of the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
Indianapolis, Indiana 46204-2251

and

Indianapolis Office of Environmental Services
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2009

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, and Indianapolis Office of Environmental Services, on or before the date it is due.
- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.20 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices pursuant to 40 CFR 82.156
- (b) Equipment used during the maintenance, service, repair or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]:

- (a) Melt Operations, installed in 1972, consisting of the following:
- (1) Two (2) electric induction furnaces, collectively identified as EU-01, with emissions collected by a canopy hood located directly over the furnaces and controlled by a settling tank followed by a cyclone which exhausts through one stack identified as stack B. Only one furnace can be operated at any time because there is only one transformer to supply electrical energy;
 - (2) One (1) charge handling system, identified as EU-02, with a maximum charge capacity of 5 tons of metal per hour. The maximum capacity of the charge handling system is limited by the source's ability to melt metal;
 - (3) One (1) natural gas preheater, identified as EU-03, with a maximum heat input capacity of 25 million Btu per hour; and
 - (4) One (1) reaction/holding ladle, identified as EU-04, where inoculation takes place.

Emissions from the charge handling system, preheater, and holding ladle are collected by the general furnace area ventilation system that exhausts through two uncontrolled stacks identified as stacks V11 and V12.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6.5-1-2(e)(2)]

Pursuant to 326 IAC 6.5-1-2(e)(2), the PM emissions from the melt operations (EU-01, EU-02, EU-03, and EU-04) shall not exceed 0.07 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating stack compliance with 326 IAC 6.5-1-2(e)(2) only the filterable fraction of PM shall be counted.

D.1.2 Particulate Matter (PM10) [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4, the PM10 emissions from the melt operations are limited as follows:

- (a) The throughput of metal to the two (2) electric induction furnaces (EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04) shall each be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The combined PM10 emissions from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 0.64 lbs PM10/ton metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
- (c) The combined PM10 emissions from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 3.24 lbs PM10/ton metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.

Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons per year. Therefore, compliance with this Condition

and Conditions D.2.2, D.3.2, and D.4.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7) and 326 IAC 2-2 (PSD) not applicable.

D.1.3 PSD Minor Source Limit [326 IAC 2-2]

- (a) The throughput of metal to the two (2) electric induction furnaces (EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04) shall each be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The PM emissions from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall be limited to 0.67 lbs PM/ton Metal.
- (c) The PM emissions from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall be limited to 2.40 lbs PM/ton Metal.

Compliance with this Condition and Condition D.2.3, and in combination with PM emissions from other emission units, renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

D.1.4 Metallic HAP Minor Limit

- (a) Emissions of manganese from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 0.207 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (b) Emission of any combination of metal HAPs from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 2.40 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (c) Emissions of manganese from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 0.744 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (d) Emission of any combination of metal HAPs from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 1.01 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

A summary of these limits is included in the following table:

Emission Unit	Pollutant	Emission Limit (tons/yr)
electric induction furnaces (stack B)	Manganese	0.207
	Total Metal HAPs	2.40
charge handling and reaction/holding ladle (stacks V11 and V12)	Manganese	0.744
	Total Metal HAPs	1.01

Compliance with the emission limits in paragraph (a) and (c) above in conjunction with the other Manganese limits included in this permit limit source-wide Manganese emissions to less than 10 tons per year. Compliance with the limits in paragraph (b) and (d) above in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

D.1.5 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the two (2) electric induction furnaces and the associated Settling Tank and Cyclone.

Compliance Determination Requirements

D.1.6 Particulate Matter (PM)

In order to demonstrate compliance with Conditions D.1.1, D.1.2(b), D.1.3(b), and the HAP emission limits in Conditions D.1.4(a) and (b), the Settling Tank and Cyclone used for PM, PM10 and HAP control shall be in operation and control emissions from the two (2) electronic induction furnaces at all times that these induction furnaces are in operation.

D.1.7 Testing Requirements [326 IAC 2-8-4(3)]

- (a) Within twelve (12) months after the issuance of this permit and in order to demonstrate compliance with Condition D.1.2 and D.1.3, the Permittee shall perform PM/PM10 testing on one (1) of the two (2) identical electric induction furnaces and the charge handling system, identified as EU-02 utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 shall include filterable and condensable PM10. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.
- (b) Within twelve (12) months after issuance of this permit and in order to demonstrate compliance with Condition D.1.4, the Permittee shall perform manganese testing on one (1) of the two (2) identical electric induction furnaces utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

D.1.8 Metallic HAP Emissions Compliance Determinations

Compliance with the HAP limits in Condition D.1.4 shall be demonstrated using the following equations:

- (a) Manganese Emissions from the two (2) electric induction furnaces (tons/yr) = EF_{FMn} (lb/ton) x M_F (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)

Where:

EF_{FMn} = 0.0207 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_F = total metal throughput to the two (2) electric induction furnaces (tons per twelve (12) consecutive month period)

- (b) Manganese Emissions from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons/yr) = EF_{CHMn} (lb/ton) x M_{CH} (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)

Where:

EF_{CHMn} = 0.0744 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_{CH} = total metal throughput to the the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons per twelve (12) consecutive month period)

- (c) Total Metal HAP Emissions from the two (2) electric induction furnaces (tons/yr) = EF_{FTM} (lb/ton) x M_F (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)

Where:

EF_{FTM} = 0.24 pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_F = total metal throughput to two (2) electric induction furnaces (tons per twelve (12) consecutive month period)

- (d) Total Metal HAP Emissions from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons/yr) = EF_{CHTM} (lb/ton) x M_{CH} (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)

Where:

EF_{CHTM} = 0.101 pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_{CH} = total metal throughput to the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons per twelve (12) consecutive month period)

- (e) Upon IDEM approval of manganese compliance stack test results on one (1) of the two (2) electric induction furnaces, the following shall apply:
- (1) The manganese emission factors in pound per ton obtained from the IDEM approved stack test results shall be used for the variable identified above as EF_{FMn} .
 - (2) The total metal HAP emission factor in pound per ton that shall be used for the variable EF_{FTM} shall be the sum of the manganese emission factor obtained from the stack test and the remaining non-manganese metal HAP emission factors used to calculate emissions.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.1.9 Visible Emissions Notations

- (a) Visible emission notations of stacks B, V11 and V12 shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.1.10 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.2, D.1.3, and D.1.4, the Permittee shall maintain monthly records of the tons of metal to the two (2) electric induction furnaces (EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04).
- (b) To document compliance with condition D.1.4, the Permittee shall maintain records of the following:
 - (1) HAP stack test results for one (1) of the two (2) electric induction furnaces;
 - (2) HAP emission calculations performed using the equations in condition D.1.8; and

- (3) HAP emissions in tons per year.
- (c) To document compliance with Condition D.1.9, the Permittee shall maintain daily records of visible emission notations for stack B, V11, and V12 exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.11 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.1.2, D.1.3, and D.1.4 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (b) Pouring and Cooling Operations, collectively identified as EU-05, where the molten metal from the melting operation are poured from ladles into molds and allowed to cool. These facilities were installed in the 1930s and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located on the ceiling above the pouring deck and exhaust through uncontrolled stacks V17, V18, V26, V27, and V28.
- (c) Shakeout Operations, collectively identified as EU-06A, where the molding sand is separated from the casting by mechanical shaking. These units were installed in 1972 and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located over the shakeout area and controlled by a cyclone, identified as CE-C, in series with a dust collector, identified as CE-A; exhausting through stack A.
- (d) Casting Cleaning Operations, collectively identified as EU-06B, with a maximum throughput of 5 tons of metal per hour, consisting of the following:
- (1) One (1) table blast installed in 1981;
 - (2) One (1) shot blast machine installed in June 1960;
 - (3) Five (5) grinders installed in 1960; and
 - (4) One (1) cutoff saw installed in 1981.
- Emissions are collected by various hoods located throughout the casting cleaning operation and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.
- (e) Sand Handling Operations, collectively identified as EU-06C, installed prior to 1967 and modified in 1998 and in 2002, with a maximum capacity of 20.63 tons of sand per hour, consisting of the following:
- (1) One (1) sand muller;
 - (2) Thirteen (13) hopper stations;
 - (3) One (1) sand elevator;
 - (4) One (1) sand tank;
 - (5) One (1) sand cooler;
 - (6) Seven (7) belts;
 - (7) One (1) molding line consisting of a B & P 16 X 20 mold machine, constructed in 2002, with a maximum production capacity of 80 molds per hour, each mold weighing 140 pounds; and
 - (8) One (1) molding line consisting of a Sinto FB03 20 X 24 mold machine, constructed in 1998, with a maximum production capacity of 80 molds per hour, each mold weighing 240 pounds.

Emissions are collected by various hoods located throughout the sand handling process line and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a), PM emissions from casting pouring and cooling operations, collectively identified as EU-05, and the sand handling, casting cleaning, and shakeout operations (EU-06A, EU-06B, and EU-06C) shall each not exceed 0.03 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating compliance with 326 IAC 6.5-1-2(e)(2) only the filterable fraction of PM shall be counted.

D.2.2 Particulate Matter (PM₁₀) and Carbon Monoxide (CO) [326 IAC 2-8-4] [326 IAC 2-2]

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits:

- (a) The throughput of metal to the pouring and cooling operations (EU-05) and the shakeout and shot blast operations (EU-06A and EU-06B) shall each be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The PM₁₀ emissions from the pouring and cooling operations (EU-05) exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 3.09 lbs PM₁₀/ton Metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM₁₀ shall be counted.
- (c) The combined CO emissions from the pouring and cooling operations (EU-05) exhausting through stacks V17, V18, V26, V27, and V28 and the shakeout operations (EU-06A) exhausting through stack A shall not exceed 6.0 lbs CO/ton Metal.
- (d) The combined PM₁₀ emissions from the shakeout, casting cleaning, and sand handling operations (EU-06A, EU-06B, and EU-06C) exhausting through stack A shall not exceed 0.30 lbs/hr. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM₁₀ shall be counted.

Combined within the PM₁₀, and CO emissions from other emission units, the PM₁₀ and CO emissions from the entire source are limited to less than 100 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.3.2, and D.4.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7) and 326 IAC 2-2 (PSD), not applicable.

D.2.3 PSD Minor Source Limit [326 IAC 2-2]

- (a) The PM emissions from the pouring and cooling operations (EU-05) shall be limited to 4.20 lbs PM/ton Metal.
- (b) The PM emissions from the shakeout, casting cleaning, and sand handling operations (EU-06A, EU-06B, and EU-06C) shall be limited to 1.19 lbs/hr.

Compliance with this Condition and Condition D.1.3 renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

D.2.4 Metallic HAP Minor Limit

- (a) Total emissions of manganese from the pouring and cooling operations (EU-05) shall not exceed 1.30 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (b) Total emissions of any combination of metal HAPs from the pouring and cooling operations (EU-05) shall not exceed 1.77 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (c) Total emissions of manganese from the shakeout and shot blast operations (EU-06A and EU-06B) shall not exceed 0.0626 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;

- (d) Total emissions of any combination of metal HAPs from the shakeout and shot blast operations (EU-06A and EU-06B) shall not exceed 2.39 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

A summary of these limits is included in the following table:

Emission Unit	Pollutant	Emission Limit (tons/yr)
pouring and cooling operations	Manganese	1.30
	Total Metal HAPs	1.77
shakeout and shot blast operations	Manganese	0.0626
	Total Metal HAPs	2.39

Compliance with the emission limit in paragraphs (a) and (c) above in conjunction with the other manganese limits included in this permit, limit source-wide manganese emissions to less than 10 tons per year. Compliance with the limit in paragraphs (b) and (d) above in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

D.2.5 Organic HAP Minor Limit

Emissions of any combination of organic HAPs from the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) combined shall not exceed 1.94 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with the limit in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

D.2.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the shakeout, casting cleaning, and sand handling operations, including the associated cyclone identified as CE-C and the baghouse identified as CE-A.

Compliance Determination Requirements

D.2.7 Particulate Matter (PM)

- (a) In order to demonstrate compliance with Conditions D.2.1, D.2.2, D.2.3, and D.2.4 the cyclone identified as CE-C and the Baghouse identified as CE-A, shall be in operation and control emissions from the sand handling, casting cleaning, and shakeout operations at all times that these units are in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse or cyclone failure is observed, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.2.8 Testing Requirements [326 IAC 2-8-4(3)]

- (a) Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Conditions D.2.1, D.2.2, D.2.3, and D.2.4 the Permittee shall perform PM, PM10, and Manganese testing on the Pouring and Cooling Operations (EU-05) and the shakeout, casting cleaning, and sand handling operations (EU-06A, EU-06B, and EU-06C) using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 shall include filterable and condensable PM10. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

- (b) Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Condition D.2.5, the Permittee shall perform total organic HAP testing on the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

D.2.9 Metallic HAP Emissions Compliance Demonstrations

- (a) Compliance with the metal HAP limits in Condition D.2.4 shall be demonstrated using the following equations:
- (1) Manganese Emissions from the pouring and cooling operations (tons/yr) = $(EF_{PCMn} \times M_{PC}) \times (1 \text{ ton} / 2000 \text{ pounds})$
- Where:
 EF_{PCMn} = 0.1302 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)
 M_{PC} = total metal throughput to the pouring and cooling operations (tons per twelve (12) consecutive month period)
- (2) Total Metal HAP Emissions from the pouring and cooling operations (tons/yr) = $(EF_{PCTM} \times M_{PC}) \times (1 \text{ ton} / 2000 \text{ pounds})$
- Where:
 EF_{PCTM} = 0.177 pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)
 M_{PC} = total metal throughput to the pouring and cooling operations (tons per twelve (12) consecutive month period)
- (3) Manganese Emissions from the shakeout and shot blast operations (tons/yr) = $(EF_{SMn} \times M_S) \times (1 \text{ ton} / 2000 \text{ pounds})$
- Where:
 EF_{SMn} = 0.00626 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)
 M_S = total metal throughput to the shakeout and shot blast operations (tons per twelve (12) consecutive month period)
- (4) Total Metal HAP Emissions from the shakeout and shot blast operations (tons/yr) = $(EF_{STM} \times M_S) \times (1 \text{ ton} / 2000 \text{ pounds})$
- Where:
 EF_{STM} = 0.239 pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)
 M_S = total metal throughput to the shakeout and shot blast operations (tons per twelve (12) consecutive month period)
- (5) Upon IDEM approval of total metallic HAP compliance stack test results on pouring and cooling operations, the manganese and total metallic HAP emission factors in pound per ton obtained from the IDEM approved stack test results shall be used for the variables identified above as EF_{PCMn} and EF_{PCTM} .
- (b) Compliance with the organic HAP limit in Condition D.2.5 shall be demonstrated using the following equation:

Total Organic HAP Emissions from the pouring and cooling operations and the shakeout operations (tons/yr) = $[(EF_{AS} \times R_{AS}) + (EF_{OC} \times R_{OC}) + (EF_{SS} \times R_{SS})] \times (1 \text{ ton} / 2000 \text{ pounds})$

Where:

EF_{AS} = 0.03184 pound combined organic HAP per pound of resin used in the air set core making operation (or an emission factor determined from the most recent compliance stack test)

R_{AS} = total resin usage in the air set core making operation (pounds per twelve (12) consecutive month period)

EF_{OC} = 0.004574 pound combined organic HAP per pound of core oil used (or an emission factor determined from the most recent compliance stack test)

R_{OC} = total core oil usage in the oil core making operation (pounds per twelve (12) consecutive month period)

EF_{SS} = 0.026222 pound combined organic HAP per pound of resin used in the redford shell sand core making operation (or an emission factor determined from the most recent compliance stack test)

R_{SS} = total resin usage in the redford shell sand core making operation (pounds per twelve (12) consecutive month period)

Upon IDEM approval of total Organic HAP compliance stack test results on the pouring and cooling operations and the shakeout operations, the total Organic HAP emission factors in pound per ton obtained from the IDEM approved stack test results shall be used for the variables identified above as EF_{AS} , EF_{OC} , and EF_{SS} .

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.2.10 Visible Emissions Notations

- (a) Visible emission notations of stacks V17, V18, V26, V27, V28, and stack A shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

D.2.11 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse, identified as CE-A, used in conjunction with the shakeout, casting cleaning, and sand handling processes, at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.5 and 7.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C – Response to Excursions and Exceedances.

The instrument used for determining the pressure shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and OES, and shall be calibrated at least once every six (6) months.

D.2.12 Broken or Failed Bag Detection

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.2.13 Record Keeping Requirements

- (a) To document compliance with Conditions D.2.2, D.2.3, and D.2.4, the Permittee shall maintain monthly records of the tons of metal to the pouring and cooling operations (EU-05) and the shakeout and shot blast operations (EU-06A and EU-06B).
- (b) To document compliance with Condition D.2.4, the Permittee shall maintain records of the following:
 - (1) Metallic HAP stack test results for the pouring and cooling operations (EU-05) and the shakeout and shot blast operations (EU-06A and EU-06B) as applicable;
 - (2) Metallic HAP emission calculations performed using the equations in Condition D.2.9(a); and
 - (3) Metallic HAP emissions in tons per year.
- (c) To document compliance with Condition D.2.5, the Permittee shall maintain records of the following:
 - (1) Organic HAP stack test results for the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) as applicable;
 - (2) Organic HAP emission calculations performed using the equations in Condition D.2.9(b); and
 - (3) Organic HAP emissions in tons per year.
- (d) To document compliance with Condition D.2.10, the Permittee shall maintain daily records of visible emission notations of stacks V17, V18, V26, V27, V28, and stack A exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).
- (e) To document compliance with Condition D.2.11, the Permittee shall maintain daily records of the pressure drop across the baghouse. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (i.e. the process did not operate that day).

- (f) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.14 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.2.2, D.2.3, D.2.4, and D.2.5 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]

- (f) Core Making Operations consisting of the following three (3) core making processes:
- (1) Two (2) Redford shell core machines identified as EU-09A and EU-09B, each with a maximum capacity 35.75 pounds of shell sand per hour and constructed in February 2002;
 - (2) One (1) air set core making process, identified as EU-07, constructed in 1982, with a maximum operating capacity of 0.5 tons of cores per hour. In the air set core making process, sand, catalyst, and resin are blended together in a sand mixer. Following blending, the blended sand is placed in the core boxes. Cores are then formed into the desired shape in the core machine. If required, the cores are placed in the core oven in order to harden the cores. The air set core oven is fired with natural gas and has a maximum heat input capacity of 0.115 million Btu per hour; and
 - (3) One (1) oil sand core making process, identified as EU-08, constructed in 1958, with a maximum operating capacity of 0.05 tons of cores per hour. In the oil core making process, sand and core oil are blended together in a sand mixer and placed in core molds to produce the desired shape. If required, the oil cores are then baked in a core oven in order to harden and strengthen the cores. The oil sand core oven is fired with natural gas and has a maximum heat input capacity of 1.6 million Btu per hour.

Emissions are collected by building ventilation hoods located in the core making area and exhaust through uncontrolled stacks V4, V5, and V38.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.3.1 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a) the PM emissions from the core making operations (EU-07, EU-08, EU-9A, and EU-9B) shall each not exceed 0.03 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating compliance with 326 IAC 6.5-1-2(a) only the filterable fraction of PM shall be counted.

D.3.2 FESOP PM10 Limit [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-1.1-5]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following sand usage and emission limits for the core making operations:

- (a) The amount of sand at the air set core making process (EU-07) shall be limited to less than 4,500 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The amount of sand at the oil sand core making process (EU-08) shall be limited to less than 730 tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The amount of shell sand at the Redford shell core making processes (EU-09A and EU-09B) shall be limited to less than 120 tons per twelve consecutive month period with compliance determined at the end of each month.

- (d) The PM10 emissions from the air set core making process, oil sand core making process, and the Redford shell core making processes (EU-07, EU-08, EU-09A, and EU-09B) shall each not exceed 0.81 lbs PM10/ton sand.

Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are each limited to less than 100 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.2.2, and D.4.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7) Prevention of Significant Deterioration (PSD) (326 IAC 2-2), and Nonattainment NSR (326 IAC 2-1.1-5) not applicable.

D.3.3 PSD Minor Source Limit [326 IAC 2-2]

- (a) The amount of sand used in the air set core making process (EU-07) shall be limited to less than 4,500 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The amount of sand used in the oil sand core making process (EU-08) shall be limited to less than 730 tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The amount of shell sand used in the Redford shell core making processes (EU-09A and EU-09B) shall be limited to less than 120 tons per twelve consecutive month period with compliance determined at the end of each month.
- (d) The PM emissions from the air set, core oil, and Redford shell core making operations (EU-07, EU-08, EU-09A, and EU-09B) shall be limited to 3.6 lbs PM/ton sand.

Compliance with these limitations renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

D.3.4 Organic HAP Minor Limit

- (a) Emissions of any combination of organic HAPs from the air set core making process (EU-07) shall not exceed 0.133 pounds per ton of sand.
- (b) Emissions of any combination of organic HAPs from the Redford shell core making processes (EU-09A and EU-09B) shall not exceed 0.191 pounds per ton of sand.
- (c) The oil sand core making process (EU-08) shall not emit any combination of organic HAPs.

Compliance with these limits and the throughput limits in D.3.3(a) and (c), in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.3.5 Visible Emissions Notations

- (a) Visible emission notations of stacks V4, V5, and V38 shall be performed once per day during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.3.6 Record Keeping Requirements

- (a) To document compliance with Conditions D.3.2, D.3.3, and D.3.4, the Permittee shall maintain monthly records of the tons of sand used in each core making process.
- (b) To document compliance with Condition D.3.5, the Permittee shall maintain daily records of visible emission notations of stacks V4, V5, and V38 exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.3.7 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.3.2, D.3.3, and D.3.4 shall be submitted to the addresses listed in Section C – General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION D.4

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]: Insignificant Activities

- (a) Old Conference Room Boiler, with a heat input capacity of 0.106 MMBtu/hr. [326 IAC 6.5-1-2(b)(3)]
- (b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1]
- (c) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.
 - (1) Woodworking operation consisting of one (1) bandsaw and one (1) oscillating vertical sand. The emissions from this operation are controlled by a dust collector with a design flow rate of 55 cubic feet per minute. [326 IAC 6.5-1]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.4.1 FESOP PM10 Limit [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-1.1-5]

Pursuant to 326 IAC 2-8-4 (FESOP), the PM10 emissions from the woodworking operation shall not exceed 0.14 pounds per hour. Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.2.2, D.3.2, and D.4.2 makes the Part 70 Operating Permit requirements (326 IAC 2-7), 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), and 326 IAC 2-4.1 (MACT) not applicable.

D.4.2 Particulate Matter (PM) [326 IAC 6.5-1]

- (a) Pursuant to 326 IAC 6.5-1-2(a), the PM emissions from the woodworking, and welding and brazing operations shall not exceed 0.03 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating compliance with 326 IAC 6.5-1-2(a) only the filterable fraction of PM shall be counted.
- (b) Pursuant to 326 IAC 6.5-1-2(b)(3), the PM emissions from the old conference room boiler shall not exceed 0.01 grains per dry standard cubic foot of exhaust gas. For purposes of demonstrating compliance with 326 IAC 6.5-1-2(b)(3) only the filterable fraction of PM shall be counted.

Compliance Determination Requirements

D.4.3 Particulate Matter (PM)

In order to demonstrate compliance with Condition D.4.1(a), the dust collector shall be in operation and control emissions from the woodworking operation at all times that the woodworking equipment are in operation.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
CERTIFICATION**

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave. Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave. Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063

This certification shall be included when submitting monitoring, testing reports/results or other documents as required by this permit.

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify) _____
- Report (specify) _____
- Notification (specify) _____
- Affidavit (specify) _____
- Other (specify) _____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865
and**

**INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
Air Compliance
2700 South Belmont Avenue
Indianapolis, IN 46221-2209**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
EMERGENCY OCCURRENCE REPORT**

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave. Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave. Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063

This form consists of 2 pages

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<input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none">• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N Describe:
Type of Pollutants Emitted: TSP, PM10, SO ₂ , VOC, NO _x , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____
Title / Position: _____
Date: _____
Phone: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Two (2) Induction Furnaces (EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04) processes
 Parameter: Metal throughput
 Limit: The throughput of metal to the two (2) electric induction furnaces (EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04) processes per twelve consecutive month period shall each be limited to less than 20,000 tons with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Metal Throughput This Month (tons)			Metal Throughput Previous 11 Months (tons)			12 Month Total Metal Throughput (tons)		
	Electric Induction Furnaces	Charge Handling	Reaction/Holding Ladle	Electric Induction Furnaces	Charge Handling	Reaction/Holding Ladle	Electric Induction Furnaces	Charge Handling	Reaction/Holding Ladle

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

Submitted by: _____
 Title / Position: _____
 Signature: _____
 Date: _____
 Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: pouring and cooling operations (EU-05)
 Parameter: Metal throughput
 Limit: The throughput of metal to the pouring and cooling operations (EU-05) shall be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Metal Throughput This Month (tons)	Metal Throughput Previous 11 Months (tons)	12 Month Total Metal Throughput (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

Submitted by: _____
 Title / Position: _____
 Signature: _____
 Date: _____
 Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: shakeout and shot blast operations (EU-06A and EU-06B)
Parameter: Metal throughput
Limit: The throughput of metal to the shakeout and shot blast operations (EU-06A and EU-06B) shall be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Metal Throughput This Month (tons)	Metal Throughput Previous 11 Months (tons)	12 Month Total Metal Throughput (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Two (2) electric induction furnaces (EU-01)
 Parameter: Manganese and total HAP emissions
 Limit: Emissions of manganese from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 0.207 ton per twelve (12) consecutive month period, with compliance determined at the end of each month. Emission of any combination of HAPs from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 2.40 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with the above limits shall be determined using the equations in Condition D.1.8(a) and (c). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- ☉ No deviation occurred in this quarter.
- ☉ Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Charge handling (EU-02) and reaction/holding ladle (EU-04) processes
 Parameter: Manganese and total HAP emissions
 Limit: Emissions of manganese from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 0.744 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Emission of any combination of HAPs from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 1.01 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Compliance with the above limits shall be determined using the equations in Condition D.1.8(b) and (d). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Pouring and cooling operations (EU-05)
 Parameter: Manganese and total metal HAP emissions
 Limit: Total emissions of manganese from the pouring and cooling operations shall not exceed 1.30 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Total emissions of any combination of metal HAPs from the pouring and cooling operations shall not exceed 1.77 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with the above limits shall be determined using the equations in Condition D.2.9(a)(1) and D.2.9(a)(2). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
 and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Shakeout and shot blast operations (EU-06A and EU-06B)
 Parameter: Manganese and total metal HAP emissions
 Limit: Total emissions of manganese from the shakeout and shot blast operations shall not exceed 0.0626 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Total emissions of any combination of metal HAPs from shakeout and shot blast operations shall not exceed 2.39 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Compliance with the above limits shall be determined using the equations in Condition D.2.9(a)(3) and D.2.9(a)(4). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
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 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Pouring and cooling (EU-05) and the shakeout operations (EU-06A)
 Parameter: Total organic HAP emissions
 Limit: Emissions of any combination of organic HAPs from the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) combined shall not exceed 1.94 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Compliance with the above limits shall be determined using the equations in Condition D.2.9(b). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Total Organic HAP Emissions This Month (tons)	Total Organic HAP Emissions Previous 11 Months (tons)	12 Month Total Organic HAP Emissions (tons)
Month 1			
Month 2			
Month 3			

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Air Set Core Making Process
Parameter: Sand Used
Limit: 4,500 tons of sand per twelve consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Tons of sand used this Month	Tons of sand used previous 11 Months	Tons of sand used 12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Oil Sand Core Oil Making Process
 Parameter: Sand Used
 Limit: 730 tons of sand per twelve consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Tons of sand used this Month	Tons of sand used previous 11 Months	Tons of sand used 12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

Submitted by: _____
 Title / Position: _____
 Signature: _____
 Date: _____
 Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Redford Shell Core Machines
Parameter: Shell Sand Used
Limit: 120 tons of shell sand per twelve consecutive month period with compliance determined at the end of each month

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Tons of sand used this Month	Tons of sand used previous 11 Months	Tons of sand used 12 Month Total
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
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 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
 QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave. Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave. Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063

Months: _____ **to** _____ **Year:** _____

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exist independent of this permit shall be reported according to the schedule stated in this applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.

**FUGITIVE DUST PLAN
INTERSTATE CASTINGS
3823 MASSACHUSETTS AVENUE
INDIANAPOLIS, INDIANA 46218
OPERATION PERMIT NUMBER F097-10170-00063**

**Prepared For:
Interstate Castings
3823 Massachusetts Avenue Indianapolis, Indiana 46218**

Project #: JG0233.220

**Issued:
March 30, 2007**

**FUGITIVE DUST PLAN
INTERSTATE CASTINGS
3823 MASSACHUSETTS AVENUE
INDIANAPOLIS, INDIANA 46218
OPERATION PERMIT NUMBER F097-10170-00063**

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List of Attachments

Attachment A – Fugitive Dust Site Plan

**FUGITIVE DUST PLAN
INTERSTATE CASTINGS
3823 MASSACHUSETTS AVENUE
INDIANAPOLIS, INDIANA 46218
OPERATION PERMIT NUMBER F097-10170-00063**

INTRODUCTION

Interstate Castings has prepared this fugitive dust plan (FDP) in order to satisfy the regulatory requirements codified in Title 326 of the Indiana Administrative Code Article 6 Rule 5 Section 3 (326 IAC 6-5-3). The purpose of this FDP is to ensure that reasonable control measures (RCM) are being utilized at the facility to minimize the quantity of fugitive dust generated at the source. The FDP includes the descriptions of all processes which have the potential to emit fugitive dust, the locations of the potential fugitive emission units, descriptions of the control measures to be implemented, a schedule of compliance and the record keeping requirements of the FDP.

SOURCE DESCRIPTION

Interstate Castings operates an iron casting facility located in Marion County that consists of the following operations: melting, pouring, cooling, shakeout, cleaning, sand handling, and core making. Marion County is classified as nonattainment area for the PM_{2.5} and 8-hour ozone standards. Marion County is classified as attainment for PM₁₀, SO₂, NO₂, CO and Lead. Interstate Castings currently operates cyclones, dust collectors and settling tanks to control fugitive dust emissions generated at the melt operations, pouring and cooling operations, shakeout, casting cleaning operations, sand handling operations, and core making operations. Fugitive emissions can also occur from the plant driveways (paved and unpaved), parking lots and aggregate storage piles.

REGULATORY OVERVIEW

Pursuant to 326 IAC 6-5, each source which has not received all the necessary preconstruction approvals before December 13, 1985 is responsible for preparation and submission of a FDP to the Indiana Department of Environmental Management (IDEM) Office of Air Quality (OAQ). The FDP consists of the identification of all processes, operations and areas which have the potential to emit fugitive dust; a map of the source showing potential fugitive emission units; the descriptions and quantities of vehicular traffic and materials handled at the source; the measures to be implemented to control fugitive dust; the specifications of the dust suppressant material or dust collection equipment used to control fugitive emissions; a schedule of compliance; and, the record keeping requirements.

FUGITIVE DUST PLAN

Interstate Castings currently operates melt operations, pouring and cooling operations, shakeout, casting cleaning operations, sand handling operations, core making operations and associated settling tanks, cyclones, and dust collectors that have the potential to generate fugitive emissions. Fugitive emissions can also occur from the plant driveways (paved and unpaved), parking lots (paved and unpaved) and aggregate storage piles. Interstate Castings' processes that emit fugitive emissions can be found in the site map provided in Attachment A.

FACILITY INFORMATION

Source Owner/ Operator: Mr. Leo J. Meyer
President

Source Address: Interstate Castings
3823 Massachusetts Avenue
Indianapolis, Indiana 46218

Melt Operations

Description of Emission Unit

Interstate Castings operates a process called Melt Operations. The Melt Operations consists of one (1) charge handling system, one (1) preheater, two (2) electric induction furnaces and one (1) holding ladle. The maximum capacity of the charge handling system is limited by the source's ability to melt metal. The preheater has a maximum heat input capacity of 25 million Btu per hour and is fired with natural gas. The melt operation has a maximum melt rate of 5 tons of metal per hour. Only one furnace can be operated at a time because there is only one transformer to supply electrical energy. Ductile iron can be produced by adding inoculants to the molten metals in the reaction ladle. The emissions from the induction furnaces are collected by a canopy hood located directly over the furnaces. The emissions collected by the furnace hood system are controlled by a settling tank followed by a cyclone which exhausts out one stack, identified as stack B. A portion of fugitive emissions from charge handling, preheater, furnace, and inoculation processes are collected by the general furnace area ventilation system which exhausts to two (2) roof top exhaust fans, identified as V11 and V12. The preheater, two induction furnaces and holding ladle were installed in 1972.

Types and Quantities of Material Handled

Interstate Castings' Melt Operation melts gray and ductile iron. The facility uses #1 busheling scrap. Interstate Castings' will add carbon and silicon to the #1 busheling to produce the gray and ductile iron that is needed. It has a maximum melt rate of 5 tons of metal per hour.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the stack B, and fans V11 and V12 are normal. Interstate Castings will monitor the visible emissions on a daily basis.

Interstate Castings will maintain and utilize the furnace hood system to ensure that capture particulate matter emissions released from melting operations are adequately captured. In addition, Interstate Castings will operate the settling tank and cyclone at all times during melting operations.

Interstate Castings will perform preventive maintenance inspections on the cyclone and settling tank to ensure proper operation of the emissions control system.

Interstate Castings will monitor visible emissions escaping the furnace hood system. If the visible emissions are abnormal, Interstate Castings will implement its compliance response plan.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their Federally Enforceable Source Operating Permit (FESOP) for the melting operations; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of stack B, and fans V-11, and V-12 exhausts. Interstate Castings will also record the results of the preventive maintenance inspections conducted on the dust collection system. If any abnormal conditions are noted Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Pouring and Cooling Operations

Description of Emission Unit

Interstate Castings has pouring and cooling operations. This operation is where the molten metal from the melting operation are poured from ladles into molds and allowed to cool. The maximum operating capacity is limited by the source's ability to melt metal. The emissions generated from pouring and cooling are uncontrolled and are emitted into the building. A portion of these emissions are collected by hoods located on the ceiling above the pouring deck and exhausts to roof top exhaust fans V17, V18, V25, V26, and V27. These operations have been conducted since the 1930s.

Types and Quantities of Material Handled

Interstate Casting utilizes a pouring and cooling operation. This operation takes the molten metal and pours it into molds. These molds are then allowed to cool. The maximum capacity of this operation is 5 tons of metal per hour.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the exhaust fans V17, V18, V25, V26 and V27 are normal. Interstate Castings will monitor the visible emissions on a daily basis.

Interstate Castings will maintain and utilize the exhaust fans V17, V18, V25, V26 and V27 above the pouring deck.

Interstate Castings will monitor visible emissions from the exhaust fans above the pouring deck. If the visible emissions are abnormal, Interstate Castings will implement its compliance response plan.

The areas around the pouring and cooling operations will be cleaned and swept as needed in order to minimize the generation of fugitive dust.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the pouring and cooling operations; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of exhaust fans. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Shakeout

Description of Emission Unit

Interstate Castings operates a shakeout process. The shakeout process is where the molding sand is separated from the casting by mechanical shaking. The maximum operating capacity is limited by the source's ability to melt metal. Emissions are collected by hoods located over the shakeout area. The emissions collected by the hoods are controlled by a cyclone, identified as control device C, and dust collector (east baghouse), identified as control device A, in a series. The emissions from the dust collector are exhausted to east baghouse discharge, identified as stack A. The emissions not collected by the hood collection system are emitted in the building and are exhausted out the general building ventilation system. This process was installed in 1972.

Types and Quantities of Materials Handled

Interstate Castings' shakeout process is where the molding sand is separated from the casting by mechanical shaking. The maximum operating capacity is limited by the source's ability to melt metal, which is 5 tons of metal per hour.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the exhaust stack A are normal. Interstate Castings will monitor the visible emissions on a daily basis.

Interstate Castings will maintain and utilize the shakeout area hoods to ensure that they adequately capture particulate matter emissions released from the shakeout operations. In addition, Interstate Castings will operate the cyclone and dust collector at all times during shakeout operations.

Interstate Castings will perform preventive maintenance inspections on the cyclone and dust collector to ensure proper operation of the emissions control system.

Interstate Castings will monitor visible emissions escaping the shakeout area hoods. If the visible emissions are abnormal, Interstate Castings will implement its compliance response plan.

The areas around the shakeout will be cleaned and swept as needed to minimize the generation of fugitive dust.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the shakeout; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of stack A exhaust. Interstate Castings will also record the results of the preventive maintenance inspections conducted on the dust collection system. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Casting Cleaning Operation

Description of Emission Units

Interstate Castings operates a casting cleaning operation. This operation consists of one (1) table blast, one (1) shot blast machine, five (5) grinders, one (1) I.D. grinder, one (1) second grinder and one (1) cutoff saw. The maximum operating capacity is limited by the source's ability to melt metal. The emissions are collected by various hoods located throughout the casting cleaning operation and are controlled by dust collector, identified as control device A, exhausts to east baghouse discharge stack, identified as stack A. The emissions not collected by the hood collection system are emitted into the building and are exhausted out the general building ventilation system. The casting cleaning processes were installed prior to 1982.

Types and Quantities of Material Handled

Interstate Castings' casting cleaning operation is limited by the source's ability to melt metal. The source's ability to melt metal is 5 tons of metal per hour.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the exhaust stack A are normal. Interstate Castings will monitor the visible emissions on a daily basis.

Interstate Castings will maintain and utilize the casting cleaning hoods to ensure that it adequately captures particulate matter emissions released from its casting cleaning operation. In addition, Interstate Castings will operate the dust collector at all times during casting cleaning operation.

Interstate Castings will perform preventive maintenance inspections on the dust collector to ensure proper operation of the emissions control system.

Interstate Castings will monitor visible emissions escaping the casting cleaning hoods. If the visible emissions are abnormal Interstate Castings will implement its compliance response plan.

The areas around the casting cleaning operation will be cleaned and swept as needed to minimize the generation of fugitive dust.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the casting cleaning; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of stack A exhausts. Interstate Castings will also record the results of the preventive maintenance inspections conducted on the dust collection system. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Sand Handling Operation

Description of Emission Units

Interstate Castings operates a sand handling operation. This operation consists of one sand muller, thirteen hopper stations, one sand elevator, one sand tank, three belts, and one molding line. The maximum capacity of the sand handling system is 20.63 tons of sand per hour. The emissions are collected by various hoods located throughout the sand handling process line and are controlled by dust collector, identified as control device A, which exhausts out east baghouse discharge stack, identified as stack A. The emissions not collected by the hood collection system are emitted in the building and are exhausted out the general building ventilation system. The sand handling processes were installed prior to 1967 and modified in 2002.

Types and Quantities of Material Handled

Interstate Castings operates a sand handling operation. The maximum capacity of the sand handling systems is 20.63 tons of sand per hour.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the exhaust stack A are normal. Interstate Castings will monitor the visible emissions on a daily basis.

Interstate Castings will maintain and utilize the dust collector to ensure that it adequately captures particulate matter emissions released from the sand handling operation. In addition, Interstate Castings will operate the dust collector at all times during sand handling operation.

Interstate Castings will perform preventive maintenance inspections on the dust collector to ensure proper operation of the emissions control system.

Interstate Castings will monitor visible emissions escaping the capture hood. If the visible emissions are abnormal Interstate Castings will implement its compliance response plan.

The areas around the sand handling operation will be cleaned and swept as needed to minimize the generation of fugitive dust.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the sand handling; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of stack A exhausts. Interstate Castings will also record the results of the preventive maintenance inspections conducted on the dust collection system. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Core Making Operations

Description of Emission Units

Interstate Castings operates a core making operation. This operation consists of two heat cure processes: shell core making process, and oil sand core making process. At the two Redford shell core machines the heated shell core box is filled with resin coated sand. In the oil core making process, sand and core oil are blended together in a sand mixer and placed in core molds to produce the desired shape. The oil cores are then baked in a core oven in order to harden and strengthen the cores. The oil sand core oven is fired with natural gas and has a maximum heat input capacity of 1.6 million Btu per hour. In the air set core making process, sand, catalyst, and resin are blended together in a sand mixer. Following blending, the blended sand is placed in the core boxes. Cores are then formed into the desired shape in the core box. If required in colder weather, cores are placed in the core oven (“easy bake oven”) in order to speed up the curing process. The air set core oven is fired with natural gas and has a maximum heat input capacity of 0.115 million Btu per hour. Emissions from the shell core making process, oil sand core making process and air set core making process are uncontrolled and are emitted in to the building. A portion of these emissions are collected by building ventilation hoods located in the core making area and are exhausted to one (1) ceiling/wall exhaust fan (V38), one (1) oven hood exhaust blower (V5) and one (1) oven exhaust blower (V4).

Types and Quantities of Material Handled

Interstate Castings core making operation is limited to the amount of sand each process can use. The airset core making process is limited to using 4,500 tons per year of sand. The oil sand process is limited to 730 tons per year of sand.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the exhaust fan V3 8, and blowers V5 and V4 are normal. Interstate Castings will monitor the visible emissions on a daily basis. The areas around the core making operations will be cleaned and swept as needed.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the core making operation; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of the fan V3 8, and blowers V4 and V5 exhaust. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Wood Working Operation

Description of Emission Source

Interstate Castings operates a wood working operation. The wood working operation consists of one (1) bandsaw and one (1) oscillating vertical sander. The emissions from this operation are controlled by a dust collector with a design flow rate of 55 cubic feet per minute.

Types and Quantities of Materials Handled

Interstate Castings operates a wood working operation. In this operation, they repair and rig wood patterns and wood core boxes for the molding and core making processes.

Fugitive Dust Control Measures

Interstate Castings will ensure that the visible emissions from the exhaust hood are normal. Interstate Castings will monitor the visible emissions on a daily basis.

Interstate Castings will maintain and utilize the dust collector to ensure that it adequately captures particulate matter emissions released from the wood working operation. In addition, Interstate Castings will operate the dust collector at all times during wood working operation.

Interstate Castings will perform preventive maintenance inspections on the dust collector to ensure proper operation of the emissions control system.

Interstate Castings will monitor visible emissions escaping the capture system. If the visible emissions are abnormal Interstate Castings will implement its compliance response plan.

The areas around the wood working operation will be cleaned and swept as needed to minimize the generation of fugitive dust.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the wood working operation at their facility; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of the visible emission notations of the dust collector. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Unpaved Roads

Description of Emission Source

Interstate Castings has unpaved roads, located around the building, from the main entrance of the facility to the back of the furnace building. The unpaved roads are hard packed gravel.

Vehicular Activity

Interstate Castings utilizes the unpaved roads for parking lots and deliveries of sand and other material. Vehicles that travel on the unpaved roads at the facility include:

Employee vehicles – 12 to 14 vehicles
12,000 pound vehicle – Once per day
34,000 pound vehicle – Three times per week
30,000 pound vehicle – Twice per week
34,000 pound vehicle – Three times per week
40,000 pound vehicle – Four times per week

It is estimated that approximately 4 miles per week are traveled on the unpaved roads by the vehicles listed above.

Fugitive Dust Control Measures

Interstate Castings will observe a speed limit of 5 miles per hour to control fugitive dust emissions to a minimum.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the unpaved roads at their facility; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will document awareness training of the speed limit for the facility.

Paved Roads

Description of Emission Source

Interstate Castings has paved roads, consisting of concrete located around and inside the building.

Vehicular Activity

Interstate Castings utilizes the paved roads for transfer of material (located either inside or outside the building) to and from different areas in the facility. Equipment utilized at the facility includes:

- 4 Fork lifts
- 1 Fork truck
- 2 Front end loaders

It is estimated that approximately 10 miles per day are traveled on the paved roads by the vehicles listed above.

Fugitive Dust Control Measures

Interstate Castings will observe a speed limit of 5 miles per hour to control fugitive dust emissions to a minimum.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the paved roads at their facility; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will document awareness training of the speed limit for the facility.

Parking Lots

Description of Emission Source

Interstate Castings has parking lots, consisting of gravel or asphalt. The west office and east plant lots are asphalt parking lots. Whereas, the west plant parking lot is gravel.

Vehicular Activity

Interstate Castings utilizes the parking lots for employee and visitor parking. It is estimated that approximately 40 vehicles per day utilize the parking lots.

Fugitive Dust Control Measures

Interstate Castings will observe a speed limit of 5 miles per hour to control fugitive dust emissions to a minimum.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the parking lots at their facility; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will document awareness training of the speed limit for the facility.

Aggregate Storage Piles

Description of Emission Source

Interstate Castings maintains aggregate storage piles of steel scrap, cast scrap, foundry sand, spent airset sand, and new sand inside the building.

Types and Quantities of Materials Handled

Interstate Castings maintains aggregate storage piles of steel scrap, cast scrap, foundry sand, spent airset sand, and new sand inside the building. These piles are stored in bins under cover of a roof. The steel scrap is contained in a bin inside the building, south of the furnace area. The cast scrap is also contained in a bin inside the building, located south of the furnace area next to steel scrap. Foundry and new sand are also stored in bins inside the building. The foundry and new sand are located close to sand handling area. The spent airset sand is in a pile on the floor, inside the building, south of the furnace area.

Fugitive Dust Control Measures

Interstate Castings will maintain the storage piles indoors when feasible.

Interstate Castings will sweep and clean the areas around the aggregate storage piles on an as needed basis.

Interstate Castings will limit to the extent possible the vehicle transfer distance between the facility and the storage piles.

Compliance Schedule

Interstate Castings is currently in compliance with all fugitive dust regulations and limitations listed in their FESOP for the storage piles at their facility; therefore a compliance schedule is not required.

Recordkeeping and Reporting Requirements

Interstate Castings will record the results of visible emission from aggregate storage piles. If any abnormal conditions are noted, Interstate Castings will take corrective actions and record the response steps taken to correct the problem.

Attachment A

Fugitive Dust Site Plan

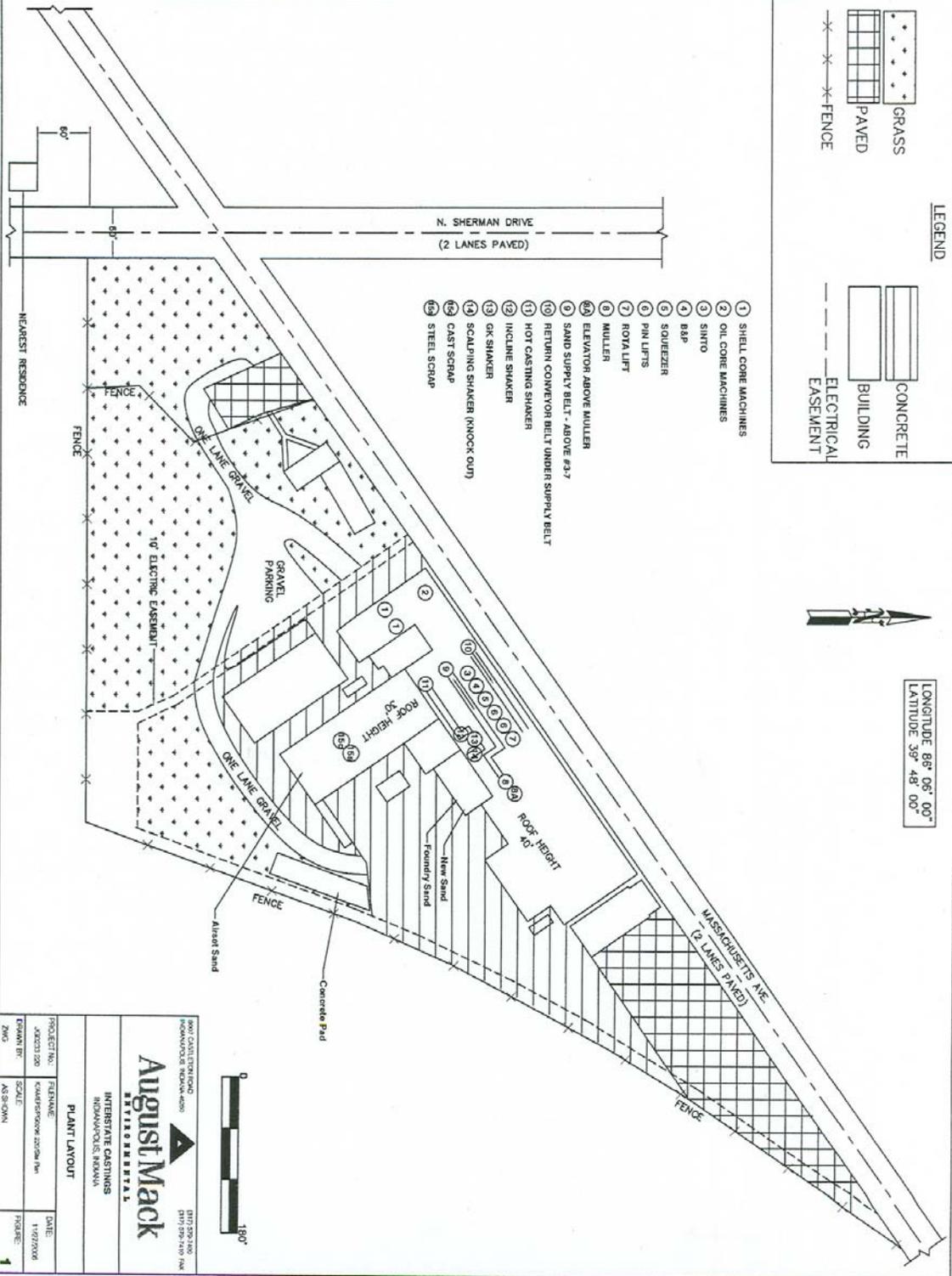
LEGEND

- GRASS
- PAVED
- FENCE
- CONCRETE
- BUILDING
- ELECTRICAL EASEMENT

LONGITUDE 86° 06' 00"
LATITUDE 39° 48' 00"



- 1 SHELL CORE MACHINES
- 2 OIL CORE MACHINES
- 3 SINTO
- 4 B&P
- 5 SQUEEZER
- 6 PIN LIFTS
- 7 ROVA LIFT
- 8 MULLER
- 9A ELEVATOR ABOVE MULLER
- 9 SAND SUPPLY BELT - ABOVE #3-7
- 10 RETURN CONVEYOR BELT UNDER SUPPLY BELT
- 11 HOT CASTING SHAKER
- 12 INCLINE SHAKER
- 13 OK SHAKER
- 14 SCALPING SHAKER (KNOCK OUT)
- 15 CAST SCRAP
- 16 STEEL SCRAP



AugustMack
INDUSTRIAL

INTERSTATE CASTINGS
HICKORYVILLE, MISSISSIPPI

PLANT LAYOUT

PROJECT NO.	FILENAME	DATE
J02021 200	KMAREP00000 202001 TM	11/07/2008
FORMAN BR.	SCALE	FIGURE
ZMS	AS SHOWN	1

**Indiana Department of Environmental Management
Office of Air Quality
and
Indianapolis Office of Environmental Services**

**Addendum to the
Technical Support Document for a Federally Enforceable State Operating
Permit (FESOP) Renewal**

Source Background and Description

Source Name:	Interstate Castings
Source Location:	3823 Massachusetts Ave, Indianapolis, Indiana 46218
County:	Marion
SIC Code:	3321
Operation Permit No.:	F097-10170-00063
Operation Permit Issuance Date:	August 17, 1999
Permit Renewal No.:	F097-18317-00063
Permit Reviewer:	ERG/JR

On March 3, 2007, the Office of Air Quality (OAQ) and Indianapolis Office of Environmental Services (OES) had a notice published in the Indianapolis Star, Indianapolis, Indiana, stating that Interstate Castings had applied for a Federally Enforceable State Operating Permit (FESOP) Renewal to continue to operate a gray and ductile iron foundry with air pollution control. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On March 30, 2007, Interstate Castings ("Interstate") submitted comments on the proposed FESOP Renewal. The summary of the comments is as follows (bolded language has been added, the language with a line through it has been deleted). The Table of Contents has been updated as necessary.

Comment 1:

In Section D.1.6, there is a requirement to stack test for PM/PM10/Mn on the melt operations. The draft permit stated that this test needs to be done within 180 days of issuance of the permit. Interstate would like to request that the requirement to test the melt operations be modified to require the test to be performed between 12 months and 18 months of issuance of the permit. This request is due to the financial burden which the required stack testing is putting on the source.

Response to Comment 1:

IDEM, OAQ and OES have decided to extend the time allowed to test one (1) of the two (2) identical electric induction furnaces and the charge handling system from "within 180 days after issuance of the permit" to "within 12 months after issuance of the permit" because the source has recently completed PM testing on these operations. The following changes have been made to the permit as a result of this comment.

D.1.6D.1.7 Testing Requirements [326 IAC 2-8-4(3)]

- (a) Within ~~one hundred and eighty (180) days~~ **twelve (12) months** after the issuance of this permit and in order to demonstrate compliance with Condition D.1.2 and D.1.3, the Permittee shall perform PM/PM10 and Manganese testing on ~~the melt operations, identified as EU-01, EU-02, and EU-04,~~ **one (1) of the two (2) identical electric induction furnaces and the charge handling system, identified as EU-02 utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 shall include filterable and condensable PM10. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.**
- (b) **Within twelve (12) months after issuance of this permit and in order to demonstrate compliance with Condition D.1.4, the Permittee shall perform manganese testing on one (1) of the two (2) identical electric induction furnaces utilizing methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.**

Comment 2:

In Section D.2.4, there is a stack testing requirement for PM/PM10/CO/Mn from the pouring cooling operations. Since carbon monoxide (CO) emissions were estimated using the IDEM accepted 6.0 lb CO/ton metal emission factor, Interstate is requesting that the CO testing requirement be removed from the permit. In addition, Interstate is requesting that the requirement to test all stacks (V17, V18, V26, V27, and V28) be eliminated. Interstate will work with the Compliance Data section of the IDEM to develop a testing protocol which will allow Interstate to test one representative exhaust point. Interstate would fabricate a temporary hood system to capture and measure the emissions closer to the emission unit for the compliance test.

Response to Comment 2:

IDEM, OAQ and OES have decided to remove the CO testing requirements for the pouring and cooling operations since a conservative emission factor was used. In order to allow more flexibility for the source, IDEM, OAQ and OES have removed the stack IDs from the remaining testing requirements for the pouring and cooling operations. Testing methods must still be approved by the Commissioner. The following change has been made to the permit as a result of this comment. Note that Condition D.2.4 has also been changed due to reasons noted elsewhere in this addendum.

D.2.4D.2.8 Testing Requirements [326 IAC 2-8-4(3)]

- (a) Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Conditions **D.2.1, D.2.2, and D.2.3, and D.2.4** the Permittee shall perform PM, PM10, ~~CO~~ and Manganese testing on the Pouring and Cooling Operations **(EU-05) and the shakeout, casting cleaning, and sand handling operations (EU-06A, EU-06B, and EU-06C)** ~~(stacks V17, V18, V26, V27, and V28)~~ using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 shall include filterable and condensable PM10. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

Comment 3:

In Section D.4.4, there is a stack testing requirement for PM/PM10 from core making operations (stacks V4, V5, V38). These emissions are uncontrolled and AP42 emission factors were used to calculate emissions for the operations. In addition, the production limits for the core making operations are very small. Interstate is, therefore, requesting that the testing requirements be removed from the permit.

Response to Comment 3:

IDEM, OAQ and OES have removed the PM/PM10 testing from the core making operations. The sand associated with the core making operations is already mixed with the binder/glue at this point of the process, therefore, PM/PM10 from the core making operations is expected to be minimal. Condition D.4.4 has been deleted from the permit as a result of this comment.

Compliance Determination Requirements

~~D.4.4 Testing Requirements [326 IAC 2-8-4(3)]~~

~~Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Conditions D.4.2 and D.4.3, the Permittee shall perform PM and PM10 testing on the core making operations (stacks V4, V5, and V38) using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C-Performance Testing. PM10 shall include filterable and condensable PM10. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.~~

Comment 4:

Interstate is requesting that the facility's name be corrected. The facility has been named as Interstate Castings, Inc. and Interstate Castings, LLC. This is incorrect. The correct name for the facility is Interstate Castings. Interstate does not wish to submit a separate administrative amendment for a name change when the permit is opened at this time.

Response to Comment 4:

The following change has been made throughout the permit as a result of this comment.

~~Interstate Castings, LLC.~~
3823 Massachusetts Avenue
Indianapolis, Indiana 46218

Comment 5:

Section A.3(c) states, "Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less..." Interstate would like to correct this statement. Interstate does not have scrubbers, mist collectors, wet collectors or electrostatic precipitators that control grinding and machining operations. Please eliminate all of these control device descriptions from the description in Section A.3(c). Update Section D.5.

Response to Comment 5:

As described in Section A.3(c)(1), the source operates a woodworking operation consisting of one (1) bandsaw and one (1) oscillating vertical sand. The emissions from this operation are controlled by a dust collector with a design flow rate of 55 cubic feet per minute. Therefore, A.3(c)(1) is the specific unit at the source that fits under the category pursuant to 326 IAC 2-7-1(21)(G)(xxiii). No change has been made to this permit as a result of this comment.

Comment 6:

On page 45 of 49, the FESOP Quarterly Report Form for Air Set Core Making Process states that "4,500 tons of shell sand per twelve consecutive month period with compliance determined at the end of each month." Air set core making process does not use shell sand, air set uses sand. Therefore, remove the word "shell" from the description. Additionally, on page 46 of 49, the FESOP Quarterly Report Form for Oil Sand Core Oil Making Process states that "730 tons of shell sand per twelve consecutive month period with compliance determined at the end of each

month.” Oil sand core making process does not use shell sand, it uses sand. Therefore, remove the word “shell” from the description.

Response to Comment 6:

The following changes have been made to the permit as a result of this comment:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings, Inc.
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Air Set Core Making Process
Parameter: Sand Used
Limit: 4,500 tons of ~~shell~~ sand per twelve consecutive month period with compliance determined at the end of each month

...

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings, Inc.
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Oil Sand Core Oil Making Process
Parameter: Sand Used
Limit: 730 tons of ~~shell~~ sand per twelve consecutive month period with compliance determined at the end of each month

...

Comment 7:

In the Technical Support Document for FESOP Renewal on page 10 of 22, it is stated “The amount of sand at the air set core making process per twelve consecutive month period shall be limited to less than 4,100 tons with compliance determined at the end of each month.” The limit is 4,500 tons of sand not 4,100 tons. Please correct this.

Response to Comment 7:

IDEM, OAQ and OES agree that the limit for sand to the air set core making process should be 4,500 tons of sand per twelve consecutive month period; however, no change has been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. The condition in the permit (Condition D.3.3(a)) correctly states that the amount of sand used in the air set core making process (EU-07) shall be limited to less than 4,500 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Comment 8:

Upon review, there was incorrect language regarding the Fugitive Dust Plan. Under the Source Description, it is stated that "Marion County is classified as an attainment area for all criteria pollutants." This was updated to state "Marion County is nonattainment for PM2.5 and 8-hour ozone. Marion County is classified as attainment for PM10, SO2, NO2, CO and Lead." We will submit the updated Fugitive Dust Plan under a separate letter.

Response to Comment 8:

IDEM, OAQ and OES agree that the Fugitive Dust Plan should be updated to state that Marion County is nonattainment for PM2.5 and 8-hour ozone. IDEM, OAQ and OES received a revised Fugitive Dust Plan on March 30, 2007. The revised plan has been included in the permit as Attachment A.

Upon further review, IDEM, OAQ and OES have decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted):

1. In order to make the permit more practically enforceable, Sections D.2 and D.3 have been combined, the Manganese limits were deleted from Condition D.1.2, revised, and moved to Condition D.1.4, and more detailed HAP emission limits have been added to the permit for the two (2) electric induction furnaces (EU-01), charge handling (EU-02) and reaction/holding ladle (EU-04) processes, pouring and cooling operations (EU-05), shakeout and shot blast operations (EU-06A and EU-06B), and the core making operations (EU-07, EU-08, EU-9A, and EU-9B). Updated organic HAP emission estimates for pouring, cooling, and shakeout (EU-05 and EU-06A) are provided on page 7 of 15 in the Appendix A of the TSD Addendum. Additionally, HAP testing, recordkeeping, and reporting requirements have been added to the permit for these units. For more clarity, emission unit references have been added throughout these sections as well.
2. In order to clarify that the stacks always vent outside the building, Conditions D.1.9(a), D.2.10(a), and D.3.5(a) (previously numbered D.1.7(a), D.2.5(a), and D.4.5(a) in the public notice draft of the permit) were revised.
3. In order to clarify recordkeeping requirements specific to parametric monitoring, Conditions D.1.10(c), D.2.13(d), and D.3.6(c) (previously numbered D.1.8(b), D.2.6(a), and D.4.6(b) in the public notice draft of the permit) were revised.

D.1.2 Particulate Matter (PM10) [326 IAC 2-8-4] [326 IAC 2-2] ~~[326 IAC 2-1.1-5] [40CFR 63 Subpart EEEEE]~~

Pursuant to 326 IAC 2-8-4, the PM10 emissions from the melt operations are limited as follows:

- (a) The **throughput amount** of metal melted at to the two (2) electric induction furnaces (**EU-01**), **charge handling (EU-02)**, and the **reaction/holding ladle (EU-04)** shall each be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The combined PM10 emissions from the two (2) electric induction furnaces (**EU-01**) **exhausting through** ~~{Stack B}~~ shall not exceed 0.64 lbs PM10/ton metal. For the

purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.

- (c) The combined PM10 emissions from the charge handling **(EU-02)** and ~~inoculation~~ **reaction/holding ladle (EU-04)** processes exhausting through stacks V11 and V12 shall not exceed 3.24 lbs PM10/ton metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
- ~~(d) The Manganese emissions from the two (2) electric induction furnaces (Stack B) shall not exceed 0.0207 lbs Manganese/ton metal.~~
- ~~(e) The Manganese emissions from the charge handling and inoculation processes exhausting through stacks V11 and V12 shall not exceed 7.44E-02 lbs Manganese/ton metal.~~

Combined with the PM10 and Manganese emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons per year, ~~the Manganese emissions from the entire source are limited to less than 10 tons per year and total HAPs emissions from the entire source are less than 25 tons per year.~~ Therefore, compliance with this Condition and Conditions D.2.2, D.3.2, ~~D.4.2, and D.5.1~~ **D.4.1** makes the Part 70 Operating Permit requirements (326 IAC 2-7), **and 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), 326 IAC 2-4.1(MACT), and 40 CFR 63, Subpart EEEEE** not applicable.

D.1.3 PSD Minor **Source** Limit [326 IAC 2-2]

- (a) The ~~throughput amount of metal melted at to~~ the two (2) electric induction furnaces **(EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04)** shall **each** be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The PM emissions from the two (2) electric induction furnaces **(EU-01) exhausting through (Stack B)** shall be limited to 0.67 lbs PM/ton Metal.
- (c) The PM emissions from the charge handling **(EU-02)** and ~~inoculation~~ **reaction/holding ladle (EU-04)** processes **exhausting through (stacks V11 and V12)** shall be limited to 2.40 lbs PM/ton Metal.

Compliance with this Condition and Conditions D.2.3 and ~~D.3.3~~, **and in combination with PM emissions from other emission units**, renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

D.1.4 **Metallic HAP Minor Limit**

- (a) **Emissions of manganese from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 0.207 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.**
- (b) **Emission of any combination of metal HAPs from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 2.40 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.**
- (c) **Emissions of manganese from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 0.744 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.**
- (d) **Emission of any combination of metal HAPs from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 1.01 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.**

A summary of these limits is included in the following table:

Emission Unit	Pollutant	Emission Limit (tons/yr)
electric induction furnaces (stack B)	Manganese	0.207
	Total Metal HAPs	2.40
charge handling and reaction/holding ladle (stacks V11 and V12)	Manganese	0.744
	Total Metal HAPs	1.01

Compliance with the emission limits in paragraph (a) and (c) above in conjunction with the other Manganese limits included in this permit limit source-wide Manganese emissions to less than 10 tons per year. Compliance with the limits in paragraph (b) and (d) above in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

D.1.4D.1.5 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

...

D.1.5D.1.6 Particulate Matter (PM)

In order to demonstrate compliance with Conditions **D.1.1**, **D.1.2(b)**, **D.1.3(b)**, and the **HAP emission limits in Conditions D.1.4(a) and (b)**, the Settling Tank and Cyclone used for PM, **PM10 and HAP** control shall be in operation and control emissions from the two (2) electronic induction furnaces at all times that these induction furnaces are in operation.

D.1.6D.1.7 Testing Requirements [326 IAC 2-8-4(3)]

...

D.1.8 Metallic HAP Emissions Compliance Demonstrations

Compliance with the HAP limits in Condition **D.1.4** shall be demonstrated using the following equations:

- (a) **Manganese Emissions from the two (2) electric induction furnaces (tons/yr) = EF_{FMn} (lb/ton) x M_F (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)**

Where:

EF_{FMn} = 0.0207 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_F = total metal throughput to the two (2) electric induction furnaces (tons per twelve (12) consecutive month period)

- (b) **Manganese Emissions from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons/yr) = EF_{CHMn} (lb/ton) x M_{CH} (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)**

Where:

EF_{CHMn} = 0.0744 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_{CH} = total metal throughput to the the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons per twelve (12) consecutive month period)

- (c) **Total Metal HAP Emissions from the two (2) electric induction furnaces (tons/yr) = EF_{FTM} (lb/ton) x M_F (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)**

Where:

$EF_{FTM} = 0.24$ pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)
 $M_F =$ total metal throughput to two (2) electric induction furnaces (tons per twelve (12) consecutive month period)

- (d) Total Metal HAP Emissions from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons/yr) = EF_{CHTM} (lb/ton) x M_{CH} (tons per twelve (12) consecutive month period) x (1 ton / 2000 pounds)

Where:

$EF_{CHTM} = 0.101$ pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

$M_{CH} =$ total metal throughput to the charge handling (EU-02) and reaction/holding ladle (EU-04) processes (tons per twelve (12) consecutive month period)

- (e) Upon IDEM approval of manganese compliance stack test results on one (1) of the two (2) electric induction furnaces, the following shall apply:
- (1) The manganese emission factors in pound per ton obtained from the IDEM approved stack test results shall be used for the variable identified above as EF_{FMn} .
 - (2) The total metal HAP emission factor in pound per ton that shall be used for the variable EF_{FTM} shall be the sum of the manganese emission factor obtained from the stack test and the remaining non-manganese metal HAP emission factors used to calculate emissions.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

~~D.1.7~~D.1.9 Visible Emissions Notations

- (a) Visible emission notations of stacks B, V11 and V12 shall be performed once per day during normal daylight operations ~~when exhausting to the atmosphere~~. A trained employee shall record whether emissions are normal or abnormal.

...

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

~~D.1.8~~D.1.10 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.2, ~~and~~ D.1.3, and D.1.4, the Permittee shall maintain monthly records of the tons of metal ~~melted at~~ to the two (2) electric induction furnaces (EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04).
- (b) To document compliance with condition D.1.4, the Permittee shall maintain records of the following:
- (1) HAP stack test results for one (1) of the two (2) electric induction furnaces;
 - (2) HAP emission calculations performed using the equations in condition D.1.8; and
 - (3) HAP emissions in tons per year.
- (bc) To document compliance with Condition ~~D.1.7~~D.1.9, the Permittee shall maintain daily records of visible emission notations for stack B, V11, and V12 exhausts ~~or maintain a record of the reason why the visual emission notations were not taken~~. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).

- (ed) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

~~D.1.9~~D.1.11 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions **D.1.2**, ~~and~~ **D.1.3**, **and D.1.4** shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

...

(c) **Shakeout Operations, collectively identified as EU-06A, where the molding sand is separated from the casting by mechanical shaking. These units were installed in 1972 and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located over the shakeout area and controlled by a cyclone, identified as CE-C, in series with a dust collector, identified as CE-A; exhausting through stack A.**

(d) **Casting Cleaning Operations, collectively identified as EU-06B, with a maximum throughput of 5 tons of metal per hour, consisting of the following:**

- (1) **One (1) table blast installed in 1981;**
- (2) **One (1) shot blast machine installed in June 1960;**
- (3) **Five (5) grinders installed in 1960; and**
- (4) **One (1) cutoff saw installed in 1981.**

Emissions are collected by various hoods located throughout the casting cleaning operation and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

(e) **Sand Handling Operations, collectively identified as EU-06C, installed prior to 1967 and modified in 1998 and in 2002, with a maximum capacity of 20.63 tons of sand per hour, consisting of the following:**

- (1) **One (1) sand muller;**
- (2) **Thirteen (13) hopper stations;**
- (3) **One (1) sand elevator;**
- (4) **One (1) sand tank;**
- (5) **One (1) sand cooler;**
- (6) **Seven (7) belts;**
- (7) **One (1) molding line consisting of a B & P 16 X 20 mold machine, constructed in 2002, with a maximum production capacity of 80 molds per hour, each mold weighing 140 pounds; and**
- (8) **One (1) molding line consisting of a Sinto FB03 20 X 24 mold machine, constructed in 1998, with a maximum production capacity of 80 molds per hour, each mold weighing 240 pounds.**

Emissions are collected by various hoods located throughout the sand handling process line and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

Pursuant to 326 IAC 6.5-1-2(a), PM emissions from casting pouring and cooling operations, collectively identified as EU-05, **and the sand handling, casting cleaning, and shakeout operations (EU-06A, EU-06B, and EU-06C)** shall each not exceed 0.03 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating compliance with 326 IAC 6.5-1-2(e)(2) only the filterable fraction of PM shall be counted.

D.2.2 Particulate Matter (PM10) and Carbon Monoxide (CO) [326 IAC 2-8-4] [326 IAC 2-2] ~~[326 IAC 2-1.1-5] [40 CFR 63, Subpart EEEEE]~~

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits:

- (a) **The throughput of metal to the pouring and cooling operations (EU-05) and the shakeout and shot blast operations (EU-06A and EU-06B) shall each be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.**
- (ab) The PM10 emissions from the pouring and cooling operations **(EU-05)** exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 3.09 lbs PM10/ton Metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
- (bc) The combined CO emissions from the pouring and cooling operations **(EU-05)** exhausting through stacks V17, V18, V26, V27, and V28 and the shakeout operations **(EU-06A)** exhausting through stack A ~~as described in Section D.3~~ shall not exceed 6.0 lbs CO/ton Metal.
- (d) **The combined PM10 emissions from the shakeout, casting cleaning, and sand handling operations (EU-06A, EU-06B, and EU-06C) exhausting through stack A shall not exceed 0.30 lbs/hr. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.**
- ~~(c) The Manganese emissions from the pouring and cooling operations exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 0.13 lbs Manganese/ton metal.~~

Combined within the PM10, ~~and CO, and Manganese~~ emissions from other emission units, the PM10 and CO emissions from the entire source are limited to less than 100 tons per year, ~~the Manganese emissions from the entire source are limited to less than 10 tons per year and total HAPs emissions from the entire source are less than 25 tons per year.~~ Therefore, compliance with this Condition and Conditions D.1.2, D.3.2, ~~D.4.2 and D.5.4~~ **D.4.1** makes the Part 70 Operating Permit requirements (326 IAC 2-7), ~~and 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), and 40 CFR 63, Subpart EEEEE~~ not applicable.

D.2.3 PSD Minor **Source** Limit [326 IAC 2-2]

- (a) The PM emissions from the pouring and cooling operations **(EU-05)** shall be limited to 4.20 lbs PM/ton Metal.
- (b) **The PM emissions from the shakeout, casting cleaning, and sand handling operations (EU-06A, EU-06B, and EU-06C) shall be limited to 1.19 lbs/hr.**

Compliance with this Condition and Conditions D.1.3 ~~and D.3.3~~ renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

D.2.4 Metallic HAP Minor Limit

- (a) Total emissions of manganese from the pouring and cooling operations (EU-05) shall not exceed 1.30 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (b) Total emissions of any combination of metal HAPs from the pouring and cooling operations (EU-05) shall not exceed 1.77 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
- (c) Total emissions of manganese from the shakeout and shot blast operations (EU-06A and EU-06B) shall not exceed 0.0626 tons per twelve (12) consecutive month period, with compliance determined at the end of each month;
- (d) Total emissions of any combination of metal HAPs from the shakeout and shot blast operations (EU-06A and EU-06B) shall not exceed 2.39 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

A summary of these limits is included in the following table:

Emission Unit	Pollutant	Emission Limit (tons/yr)
pouring and cooling operations	Manganese	1.30
	Total Metal HAPs	1.77
shakeout and shot blast operations	Manganese	0.0626
	Total Metal HAPs	2.39

Compliance with the emission limit in paragraphs (a) and (c) above in conjunction with the other manganese limits included in this permit, limit source-wide manganese emissions to less than 10 tons per year. Compliance with the limit in paragraphs (b) and (d) above in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

D.2.5 Organic HAP Minor Limit

Emissions of any combination of organic HAPs from the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) combined shall not exceed 1.94 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. Compliance with the limit in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

D.2.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the shakeout, casting cleaning, and sand handling operations, including the associated cyclone identified as CE-C and the baghouse identified as CE-A.

Compliance Determination Requirements

D.2.7 Particulate Matter (PM)

- (a) In order to demonstrate compliance with Conditions D.2.1, D.2.2, D.2.3, and D.2.4 the cyclone identified as CE-C and the Baghouse identified as CE-A, shall be in operation and control emissions from the sand handling, casting cleaning, and shakeout operations at all times that these units are in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse or cyclone failure is observed, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units

will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.2.4D.2.8 Testing Requirements [326 IAC 2-8-4(3)]

- (a) Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Conditions **D.2.1**, **D.2.2**, and **D.2.3**, and **D.2.4** the Permittee shall perform PM, PM₁₀, CO and Manganese testing on the Pouring and Cooling Operations (**EU-05**) and the shakeout, casting cleaning, and sand handling operations (**EU-06A**, **EU-06B**, and **EU-06C**) (~~stacks V17, V18, V26, V27, and V28~~) using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. PM₁₀ shall include filterable and condensable PM₁₀. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.
- (b) Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Condition **D.2.5**, the Permittee shall perform total organic HAP testing on the pouring and cooling operations (**EU-05**) and the shakeout operations (**EU-06A**) using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

D.2.9 Metallic HAP Emissions Compliance Demonstrations

- (a) Compliance with the metal HAP limits in Condition **D.2.4** shall be demonstrated using the following equations:

(1) Manganese Emissions from the pouring and cooling operations (tons/yr) = $(EF_{PCMn} \times M_{PC}) \times (1 \text{ ton} / 2000 \text{ pounds})$

Where:

EF_{PCMn} = 0.1302 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_{PC} = total metal throughput to the pouring and cooling operations (tons per twelve (12) consecutive month period)

(2) Total Metal HAP Emissions from the pouring and cooling operations (tons/yr) = $(EF_{PCTM} \times M_{PC}) \times (1 \text{ ton} / 2000 \text{ pounds})$

Where:

EF_{PCTM} = 0.177 pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_{PC} = total metal throughput to the pouring and cooling operations (tons per twelve (12) consecutive month period)

(3) Manganese Emissions from the shakeout and shot blast operations (tons/yr) = $(EF_{SMn} \times M_S) \times (1 \text{ ton} / 2000 \text{ pounds})$

Where:

EF_{SMn} = 0.00626 pound manganese per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

M_S = total metal throughput to the shakeout and shot blast operations (tons per twelve (12) consecutive month period)

(4) Total Metal HAP Emissions from the shakeout and shot blast operations (tons/yr) = $(EF_{STM} \times M_S) \times (1 \text{ ton} / 2000 \text{ pounds})$

Where:

$EF_{STM} = 0.239$ pound combined metal HAP per ton of metal throughput (or an emission factor determined from the most recent compliance stack test)

$M_S =$ total metal throughput to the shakeout and shot blast operations (tons per twelve (12) consecutive month period)

- (5) Upon IDEM approval of total metallic HAP compliance stack test results on pouring and cooling operations, the manganese and total metallic HAP emission factors in pound per ton obtained from the IDEM approved stack test results shall be used for the variables identified above as EF_{PCMn} and EF_{PTM} .

- (b) Compliance with the organic HAP limit in Condition D.2.5 shall be demonstrated using the following equation:

Total Organic HAP Emissions from the pouring and cooling operations and the shakeout operations (tons/yr) = $[(EF_{AS} \times R_{AS}) + (EF_{OC} \times R_{OC}) + (EF_{SS} \times R_{SS})] \times (1 \text{ ton} / 2000 \text{ pounds})$

Where:

$EF_{AS} = 0.03184$ pound combined organic HAP per pound of resin used in the air set core making operation (or an emission factor determined from the most recent compliance stack test)

$R_{AS} =$ total resin usage in the air set core making operation (pounds per twelve (12) consecutive month period)

$EF_{OC} = 0.004574$ pound combined organic HAP per pound of core oil used (or an emission factor determined from the most recent compliance stack test)

$R_{OC} =$ total core oil usage in the oil core making operation (pounds per twelve (12) consecutive month period)

$EF_{SS} = 0.026222$ pound combined organic HAP per pound of resin used in the redford shell sand core making operation (or an emission factor determined from the most recent compliance stack test)

$R_{SS} =$ total resin usage in the redford shell sand core making operation (pounds per twelve (12) consecutive month period)

Upon IDEM approval of total Organic HAP compliance stack test results on the pouring and cooling operations and the shakeout operations, the total Organic HAP emission factors in pound per ton obtained from the IDEM approved stack test results shall be used for the variables identified above as EF_{AS} , EF_{OC} , and EF_{SS} .

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.2.5D.2.10 Visible Emissions Notations

- (a) Visible emission notations of stacks V17, V18, V26, V27, and V28, and stack A shall be performed once per day during normal daylight operations ~~when exhausting to the atmosphere~~. A trained employee shall record whether emissions are normal or abnormal.

...

D.2.11 Parametric Monitoring

The Permittee shall record the pressure drop across the baghouse, identified as CE-A, used in conjunction with the shakeout, casting cleaning, and sand handling processes, at least once per day when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.5 and 7.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a

deviation from this permit. Failure to take response steps in accordance with Section C – Response to Excursions and Exceedances.

The instrument used for determining the pressure shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and OES, and shall be calibrated at least once every six (6) months.

D.2.12 Broken or Failed Bag Detection

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).**
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).**

Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

~~D.2.6~~D.2.13 Record Keeping Requirements

- (a) To document compliance with Conditions D.2.2, D.2.3, and D.2.4, the Permittee shall maintain monthly records of the tons of metal to the pouring and cooling operations (EU-05) and the shakeout and shot blast operations (EU-06A and EU-06B).**
- (b) To document compliance with Condition D.2.4, the Permittee shall maintain records of the following:**
 - (1) Metallic HAP stack test results for the pouring and cooling operations (EU-05) and the shakeout and shot blast operations (EU-06A and EU-06B) as applicable;**
 - (2) Metallic HAP emission calculations performed using the equations in Condition D.2.9(a); and**
 - (3) Metallic HAP emissions in tons per year.**
- (c) To document compliance with Condition D.2.5, the Permittee shall maintain records of the following:**
 - (1) Organic HAP stack test results for the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) as applicable;**
 - (2) Organic HAP emission calculations performed using the equations in Condition D.2.9(b); and**
 - (3) Organic HAP emissions in tons per year.**
- (ad) To document compliance with Condition ~~D.2.5~~**D.2.10**, the Permittee shall maintain daily records of visible emission notations of stacks V17, V18, V26, V27, and V28, and stack A exhausts or maintain a record of the reason why the visual emission notations were not taken. The Permittee shall include in its daily record when a visible emission**

notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).

- (e) **To document compliance with Condition D.2.11, the Permittee shall maintain daily records of the pressure drop across the baghouse. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (i.e. the process did not operate that day).**
- (bf) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.14 Reporting Requirements

A quarterly summary of the information to document compliance with Conditions D.2.2, D.2.3, D.2.4, and D.2.5 shall be submitted to the addresses listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-8-4(10)]

- (c) ~~Shakeout Operations, collectively identified as EU-06A, where the molding sand is separated from the casting by mechanical shaking. These units were installed in 1972 and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located over the shakeout area and controlled by a cyclone, identified as CE-C, in series with a dust collector, identified as CE-A; exhausting through stack A.~~
- (d) ~~Casting Cleaning Operations, collectively identified as EU-06B, with a maximum throughput of 5 tons of metal per hour, consisting of the following:~~
- ~~(1) One (1) table blast installed in 1981;~~
 - ~~(2) One (1) shot blast machine installed in June 1960;~~
 - ~~(3) Five (5) grinders installed in 1960; and~~
 - ~~(4) One (1) cutoff saw installed in 1981.~~
- ~~Emissions are collected by various hoods located throughout the casting cleaning operation and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.~~
- (e) ~~Sand Handling Operations, collectively identified as EU-06C, installed prior to 1967 and modified in 1998 and in 2002, with a maximum capacity of 20.63 tons of sand per hour, consisting of the following:~~
- ~~(1) One (1) sand muller;~~
 - ~~(2) Thirteen (13) hopper stations;~~
 - ~~(3) One (1) sand elevator;~~
 - ~~(4) One (1) sand tank;~~
 - ~~(5) One (1) sand cooler;~~
 - ~~(6) Seven (7) belts;~~
 - ~~(7) One (1) molding line consisting of a B & P 16 X 20 mold machine, constructed in 2002, with a maximum production capacity of 80 molds per hour, each mold weighing 140 pounds; and~~
 - ~~(8) One (1) molding line consisting of a Sinto FB03 20 X 24 mold machine, constructed in 1998, with a maximum production capacity of 80 molds per hour, each mold weighing 240 pounds.~~
- ~~Emissions are collected by various hoods located throughout the sand handling process line and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.~~

~~(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)~~

Emission Limitations and Standards ~~[326 IAC 2-8-4(1)]~~

~~D.3.1 Particulate Matter (PM) [326 IAC 6.5-1-2(a)]~~

~~Pursuant to 326 IAC 6.5-1-2(a), the PM emissions from the sand handling, casting cleaning, and shakeout operations (EU 06A, EU 06B, and EU 06C) shall each not exceed 0.03 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating compliance with 326 IAC 6.5-1-2(a) only the filterable fraction of PM shall be counted.~~

~~D.3.2 Particulate (PM10) and HAP [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-1.1-5] [326 IAC 2-4.1] [40 CFR 63, Subpart EEEEE]~~

~~Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits:~~

- ~~(a) — The combined PM10 emissions from the shakeout, casting cleaning (including shot blast), and sand handling operations exhausting through stack A shall not exceed 0.30 lbs/hr. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.~~
- ~~(b) — The Manganese emissions from shakeout and shot blast operations exhausting through stack A shall not exceed 6.26E-03 lbs Manganese/ton Metal.~~

~~Combined with the PM10 and Manganese emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons per year, the Manganese emissions from the entire source are limited to less than 10 tons per year, and total HAPs emissions from the entire source are less than 25 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.2.2, D.4.2, and D.5.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7), 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), 326 IAC 2-4.1 (MACT), and 40 CFR 63, Subpart EEEEE not applicable.~~

~~D.3.3 PSD Minor Limit [326 IAC 2-2]~~

~~The PM emissions from the shakeout, casting cleaning (including shotblast), and sand handling shall be limited to 1.19 lbs/hr. Compliance with this Condition and Conditions D.1.3 and D.2.3 renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.~~

~~D.3.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Section B — Preventive Maintenance Plan, of this permit, is required for the shakeout, casting cleaning, and sand handling operations and the associated cyclone identified as CE-C and the baghouse identified as CE-A.~~

Compliance Determination Requirements

~~D.3.5 Particulate Matter (PM)~~

- ~~(a) — In order to demonstrate compliance with Conditions D.3.1, and D.3.2, **D.3.3, and D.3.4** the cyclone identified as CE-C and the Baghouse identified as CE-A, shall be in operation and control emissions from the sand handling, casting cleaning, and shakeout operations at all times that these units are in operation.~~
- ~~(b) — In the event that bag failure is observed in a multi-compartment baghouse or cyclone failure is observed, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.~~

~~D.3.6 Testing Requirements [326 IAC 2-8-4(3)]~~

~~Within one hundred and eighty (180) days after the issuance of this permit and in order to demonstrate compliance with Conditions D.3.2 and D.3.3, the Permittee shall perform PM/PM10~~

~~and Manganese testing on exhaust stack A using methods as approved by the Commissioner. Testing shall be conducted in accordance with Section C - Performance Testing. PM10 shall include filterable and condensable PM10. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.~~

Compliance Monitoring Requirements ~~[326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]~~

D.3.7 ~~Visible Emissions Notations~~

- ~~(a) Visible emission notations of stack A shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.~~
- ~~(b) For processes operated continuously, "normal" means those conditions prevailing, or counting startup or shut down time.~~
- ~~(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.~~
- ~~(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.~~
- ~~(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.~~

D.3.8 ~~Parametric Monitoring~~

~~The Permittee shall record the pressure drop across the baghouse, identified as CE A, used in conjunction with the Casting Cleaning, Sand Handling and Shakeout processes, at least once per day when the process is in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.5 and 7.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Response to Excursions and Exceedances.~~

~~The instrument used for determining the pressure shall comply with Section C - Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and OES, and shall be calibrated at least once every six (6) months.~~

D.3.9 ~~Broken or Failed Bag Detection~~

- ~~(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).~~
- ~~(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).~~

~~Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.~~

Record Keeping and Reporting Requirements ~~[326 IAC 2-8-4(3)]~~[326 IAC 2-8-16]

~~D.3.10 Record Keeping Requirements~~

~~(a) To document compliance with Condition D.3.7, the Permittee shall maintain daily records of visible emission notations of stack A exhaust or maintain a record of the reason why the visual emission notations were not taken.~~

~~(b) To document compliance with Condition D.3.8, the Permittee shall maintain daily records of the pressure drop across the baghouse or maintain a record of the reason why the pressure drop records were not taken.~~

~~(c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.~~

SECTION ~~D.4D.3~~

FACILITY OPERATION CONDITIONS

...

~~D.4.1D.3.1~~ Particulate Matter (PM) [326 IAC 6.5-1-2(a)]

...

~~D.4.2D.3.2~~ FESOP PM10 Limit [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-1.1-5]

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following sand usage and emission limits for the core making operations:

- (a) The amount of sand at the air set core making process (**EU-07**) shall be limited to less than 4,500 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The amount of sand at the oil sand core making process (**EU-08**) shall be limited to less than 730 tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The amount of shell sand at the Redford shell core making processes (**EU-09A and EU-09B**) shall be limited to less than 120 tons per twelve consecutive month period with compliance determined at the end of each month.
- (d) The PM10 emissions from the air set core making process, oil sand core making process, and the Redford shell core making processes (**EU-07, EU-08, EU-09A, and EU-09B**) shall each not exceed 0.81 lbs PM10/ton sand.

Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are each limited to less than 100 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.2.2, ~~D.3.2~~ and ~~D.5.4D.4.1~~ makes the Part 70 Operating Permit requirements (326 IAC 2-7) Prevention of Significant Deterioration (PSD) (326 IAC 2-2), and Nonattainment NSR (326 IAC 2-1.1-5) not applicable.

~~D.4.3D.3.3~~ PSD Minor **Source Limit [326 IAC 2-2]**

- (a) The amount of sand used in the air set core making process (**EU-07**) shall be limited to less than 4,500 tons per twelve consecutive month period with compliance determined at the end of each month.
- (b) The amount of sand used in the oil sand core making process (**EU-08**) shall be limited to less than 730 tons per twelve consecutive month period with compliance determined at the end of each month.
- (c) The amount of shell sand used in the Redford shell core making processes (**EU-09A and EU-09B**) shall be limited to less than 120 tons per twelve consecutive month period with compliance determined at the end of each month.
- (d) The PM emissions from the air set, core oil, and Redford shell core making operations (**EU-07, EU-08, EU-09A, and EU-09B**) shall be limited to 3.6 lbs PM/ton sand.

Compliance with these limitations renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

D.3.4 Organic HAP Minor Limit

- (a) **Emissions of any combination of organic HAPs from the air set core making process (EU-07) shall not exceed 0.133 pounds per ton of sand.**
- (b) **Emissions of any combination of organic HAPs from the Redford shell core making processes (EU-09A and EU-09B) shall not exceed 0.191 pounds per ton of sand.**

- (c) **The oil sand core making process (EU-08) shall not emit any combination of organic HAPs.**

Compliance with these limits and the throughput limits in D.3.3(a) and (c), in conjunction with the other combined HAP limits included in this permit limit source-wide emissions of any combination of HAPs to less than 25 tons per year.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

~~D.4.5~~**D.3.5** Visible Emissions Notations

- (a) Visible emission notations of stacks V4, V5, and V38 shall be performed once per day during normal daylight operations ~~when exhausting to the atmosphere~~. A trained employee shall record whether emissions are normal or abnormal.

...

Record Keeping and Reporting Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

~~D.4.6~~**D.3.6** Record Keeping Requirements

- (a) To document compliance with Conditions ~~D.4.2 and D.4.3~~, **D.3.2, D.3.3, and D.3.4** the Permittee shall maintain monthly records of the tons of sand used in each core making process.
- (b) To document compliance with Condition ~~D.4.5~~**D.3.5**, the Permittee shall maintain daily records of visible emission notations of stacks V4, V5, and V38 exhausts ~~or maintain a record of the reason why the visual emission notations were not taken~~. **The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation, (i.e. the process did not operate that day).**

...

~~D.4.7~~**D.3.7** Reporting Requirements

A quarterly summary of the information to document compliance with Conditions ~~D.4.2 and D.4.3~~, **D.3.2, D.3.3, and D.3.4** shall be submitted to the addresses listed in Section C – General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by an “authorized individual” as defined by 326 IAC 2-1.1-1(1).

SECTION ~~D.5~~D.4

FACILITY OPERATION CONDITIONS

...

~~D.5.1~~D.4.1 FESOP PM10 Limit [326 IAC 2-8-4] [326 IAC 2-2] [326 IAC 2-1.1-5]

...

~~D.5.2~~D.4.2 Particulate Matter (PM) [326 IAC 6.5-1]

...

Compliance Determination Requirements

~~D.5.3~~D.4.3 Particulate Matter (PM)

In order to demonstrate compliance with Condition ~~D.5.1(a)~~**D.4.1(a)**, the dust collector shall be in operation and control emissions from the woodworking operation at all times that the woodworking ~~operation~~ **equipment** are in operation.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
 Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
 FESOP No.: F097-18317-00063
 Facility: Two (2) Induction Furnaces **(EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04) processes**
 Parameter: ~~Metal Melted~~ **throughput**
 Limit: The amount throughput of metal melted at to the two (2) electric induction furnaces **(EU-01), charge handling (EU-02), and the reaction/holding ladle (EU-04) processes** per twelve consecutive month period shall **each** be limited to less than 20,000 tons with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Metal Throughput This Month (tons)			Metal Throughput Previous 11 Months (tons)			12 Month Total Metal Throughput (tons)		
	Electric Induction Furnaces	Charge Handling	Reaction/Holding Ladle	Electric Induction Furnaces	Charge Handling	Reaction/Holding Ladle	Electric Induction Furnaces	Charge Handling	Reaction/Holding Ladle

Month	Column 1	Column 2	Column 1 + Column 2
	Tons of metal melted this Month	Tons of metal melted previous 11 Months	Tons of metal melted 12 Month Total
Month 1			
Month 2			
Month 3			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.

Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Pouring and cooling operations (EU-05)
Parameter: Metal throughput
Limit: The throughput of metal to the pouring and cooling operations (EU-05) shall be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Metal Throughput This Month (tons)	Metal Throughput Previous 11 Months (tons)	12 Month Total Metal Throughput (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION
and
INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Shakeout and shot blast operations (EU-06A and EU-06B)
Parameter: Metal throughput
Limit: The throughput of metal to the shakeout and shot blast operations (EU-06A and EU-06B) shall be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Metal Throughput This Month (tons)	Metal Throughput Previous 11 Months (tons)	12 Month Total Metal Throughput (tons)
Month 1			
Month 2			
Month 3			

- No deviation occurred in this quarter.
- Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____
Title / Position: _____
Signature: _____
Date: _____
Phone: _____

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
 and
 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Two (2) electric induction furnaces (EU-01)
Parameter: Manganese and total HAP emissions
Limit: Emissions of manganese from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 0.207 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Emission of any combination of HAPs from the two (2) electric induction furnaces (EU-01) exhausting through Stack B shall not exceed 2.40 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Compliance with the above limits shall be determined using the equations in Condition D.1.8(a) and (c). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- ☛ No deviation occurred in this quarter.
- ☛ Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Charge handling (EU-02) and reaction/holding ladle (EU-04) processes
Parameter: Manganese and total HAP emissions
Limit: Emissions of manganese from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 0.744 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Emission of any combination of HAPs from the charge handling (EU-02) and reaction/holding ladle (EU-04) processes exhausting through stacks V11 and V12 shall not exceed 1.01 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Compliance with the above limits shall be determined using the equations in Condition D.1.8(b) and (d). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- ☛ No deviation occurred in this quarter.
- ☛ Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Pouring and cooling operations (EU-05)
Parameter: Manganese and total metal HAP emissions
Limit: Total emissions of manganese from the pouring and cooling operations shall not exceed 1.30 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Total emissions of any combination of metal HAPs from the pouring and cooling operations shall not exceed 1.77 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Compliance with the above limits shall be determined using the equations in Condition D.2.9(a)(1) and D.2.9(a)(2). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- ☛ No deviation occurred in this quarter.
- ☛ Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION
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 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Shakeout and shot blast operations (EU-06A and EU-06B)
Parameter: Manganese and total metal HAP emissions
Limit: Total emissions of manganese from the shakeout and shot blast operations shall not exceed 0.0626 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
 Total emissions of any combination of metal HAPs from shakeout and shot blast operations shall not exceed 2.39 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with the above limits shall be determined using the equations in Condition D.2.9(a)(3) and D.2.9(a)(4). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1a	Column 1b	Column 1c	Column 2a	Column 1a + Column 1c	Column 1b + Column 2b
	Manganese Emissions This Month (tons)	Total HAP Emissions This Month (tons)	Manganese Emissions Previous 11 Months (tons)	Total HAP Emissions Previous 11 Months (tons)	12 Month Total Mn Emissions (tons)	12 Month Total HAP Emissions (tons)

- ☛ No deviation occurred in this quarter.
- ☛ Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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 INDIANAPOLIS OFFICE OF ENVIRONMENTAL SERVICES
 AIR COMPLIANCE**

FESOP Quarterly Report

Source Name: Interstate Castings
Source Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
Mailing Address: 3823 Massachusetts Ave., Indianapolis, Indiana 46218
FESOP No.: F097-18317-00063
Facility: Pouring and cooling (EU-05) and the shakeout operations (EU-06A)
Parameter: Total organic HAP emissions
Limit: Emissions of any combination of organic HAPs from the pouring and cooling operations (EU-05) and the shakeout operations (EU-06A) combined shall not exceed 1.94 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with the above limits shall be determined using the equations in Condition D.2.9(b). Please attach supporting calculations and data used for determining HAP emissions reported.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	Total Organic HAP Emissions This Month (tons)	Total Organic HAP Emissions Previous 11 Months (tons)	12 Month Total Organic HAP Emissions (tons)
Month 1			
Month 2			
Month 3			

- ☛ No deviation occurred in this quarter.
- ☛ Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
 Title / Position:
 Signature:
 Date:
 Phone:

Attach a signed certification to complete this report.

**Appendix A - Emissions Calculations for Interstate Castings
Furnaces**

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: April 5, 2007

Emission Unit: EU-01
 Unit Description: Two Electric Induction Furnaces (only one can operate at a time)
 Furnace Capacity: 5 tons of metal charged per hour
 Control Device: Settling Tank/Cyclone
 Capture Efficiency: 99.00%
 Control Efficiency: 25.00%
 Stack ID: B
 Stack Flow Rate (acfm) 8500

Potential Emissions (before control) - Two Electric Induction Furnaces

Pollutants	PM	PM10	VOC	CO	SOx	NOx	Pb
Em. Factor	0.9	0.86	0	0	0	0	0.1
SCC	30400303	30400303	30400303	30400303	30400303	30400303	30400303
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	19.71	18.83	0.00	0.00	0.00	0.00	2.19
Pollutants	Cr	Mn	Co	Ni	As	Cd	Se
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00006	0.00001
Em. Factor	0.00034	0.02790	0.00003	0.00060	0.00012	0.00005	0.00001
Source of Em. Factor*	Speciate v3.2						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	7.49E-03	6.11E-01	5.91E-04	1.32E-02	2.56E-03	1.18E-03	1.97E-04

* The emission factors for metals were calculated using the wt% value from Speciate v3.2 and multiplying this percentage by the emission factor for PM (which was taken from FIRE 6.25).

Allowable Emissions - Two Electric Induction Furnaces

Pollutant	Rule Cite	gr/dscf	lbs/hr	tons/yr
PM	326 IAC 6.5-1-2(e)	0.07	5.1	22.338

Limited PTE (after control and production limit) - Two Electric Induction Furnaces

Production Limit	20000	tons of metal/12 months					
Pollutant	PM*	PM10*	VOC	CO	SOx	NOx	Pb
Emissions Not Captured (tpy)	0.09	0.086	0.00	0.00	0.00	0.00	0.01
Stack B Emissions (tpy)	6.6825	6.3855	0.00	0.00	0.00	0.00	0.74
Total	6.7725	6.4715	0	0	0	0	0.7525
Pollutants	Cr	Mn	Co	Ni	As	Cd	Se
Emissions Not Captured (tpy)	3.42E-05	2.79E-03	2.70E-06	6.03E-05	1.17E-05	5.40E-06	9.00E-07
Stack B Emissions (tpy)	2.54E-03	2.07E-01	2.00E-04	4.48E-03	8.69E-04	4.01E-04	6.68E-05
Total	2.57E-03	2.10E-01	2.03E-04	4.54E-03	8.80E-04	4.06E-04	6.77E-05

Methodology

Potential Emissions (before control) was calculated using the following equation:
 Emissions (tons/yr) =
 (Emission Factor, lbs/ton x Furnace Capacity, tons metal/hr x 8760 hr/yr) / 2000 lbs/ton

Limited PTE was calculated using the following equation(s):
 Emissions Not Captured (tpy) =
 (Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton x (1- Collection Efficiency)

Stack B Emissions (tpy) =
 (Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton x Collection Eff. x (1-Control Eff.)

**Appendix A - Emissions Calculations for Interstate Castings
Charge Handling**

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: April 5, 2007

Emission Unit: EU-02
Unit Description: Charge Handling
Furnace Capacity: 5 tons of metal charged per hour
Stack ID: V11 and V12
Control Efficiency: No Control

Potential Emissions

Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	0.6	0.36	0	0	0	0		
SCC	30400315	30400315	30400315	30400315	30400315	30400315		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	13.14	7.88	0.00	0.00	0.00	0.00		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00023	0.01860	0.00002	0.00040	0.00008	0.00001	0.00004	0.00231
Source of Em. Factor*	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	4.99E-03	4.07E-01	3.94E-04	8.80E-03	1.71E-03	1.31E-04	7.88E-04	5.06E-02

* The emission factors for metals were calculated using the wt% value from Speciate v3.2 and multiplying this percentage by the emission factor for PM (which was taken from FIRE 6.25).

Limited PTE (after control and production limit) - Charge Handling

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10*	VOC	CO	SOx	NOx		
Charge Handling Emissions (tpy)	6	5.4	0	0	0	0		
Pollutant	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Charge Handling Emissions (tpy)	0.0023	0.1860	0.0002	0.0040	0.0008	0.0001	0.0004	0.0231

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions was calculated using the following equation:

Emissions (tons/yr) =
(Emission Factor, lbs/ton x Furnace Capacity, tons metal/hr x 8760 hr/yr) / 2000 lbs/ton

Limited PTE was calculated using the following equation:

Charge Handling Emissions (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton

**Appendix A - Emissions Calculations for Interstate Castings
Preheater**

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: April 5, 2007

Emission Unit: EU-03
 Unit Description: Preheater
 Fuel: Natural Gas
 Maximum firing rate: 0.025 mmcf/hr
 Stack ID: V11 and V12

Potential Emissions - Preheater

Pollutants	PM	PM10*	VOC	CO	SOx	NOx	Pb
Em. Factor	7.6	7.6	5.5	84	0.6	100	0.0005
SCC	10200602	10200602	10200602	10200602	10200602	10200602	10200602
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/mmcf						
Emissions (tons/yr)	0.83	1.25	0.60	9.20	0.07	10.95	0.00

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.
 Note: HAP emissions for the preheater can be found on page 10 of this Appendix A.

Methodology

Potential Emissions was calculated using the following equation:

$$\text{Emissions (tons/yr)} = (\text{Emission Factor, lbs/mmcf}) * (\text{Maximum firing rate, mmcf/hr}) * (8760 \text{ hr/yr}) / (2000 \text{ lbs/ton})$$

**Appendix A - Emissions Calculations for Interstate Castings
Inoculation**

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: April 5, 2007

Emission Unit: EU-04
Unit Description: Ductile Iron Production - Inoculation
Charge Capacity: 5 tons of metal charged per hour
Stack ID: V11 and V12
Control Efficiency: No Control

Potential Emissions - Ductile Iron Production/Inoculation

Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	1.8	1.8	0	0	0	0		
SCC	30400321	30400321	30400321	30400321	30400321	30400321		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	39.42	39.42	0.00	0.00	0.00	0.00		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00068	0.05580	0.00005	0.00121	0.00023	0.00002	0.00011	0.00693
Source of Em. Factor	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	1.50E-02	1.22E+00	1.18E-03	2.64E-02	5.12E-03	3.94E-04	2.37E-03	1.52E-01

Limited PTE (after control and production limit) - Ductile Iron Production/Inoculation

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10	VOC	CO	SOx	NOx		
Ductile Iron Production/Inoculation Emissions (tpy)	18	27	0	0	0	0		
Pollutant	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Ductile Iron Production/Inoculation Emissions (tpy)	0.00684	0.558	0.00054	0.01206	0.00234	0.00018	0.00108	0.0693

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Limited PTE was calculated using the following equation:

Ductile Iron Production/Inoculation Emissions (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton

**Appendix A - Emissions Calculations for Interstate Castings
Pouring/Casting/Cooling**

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: April 4, 2007

Emission Unit: EU-05
Unit Description: Pouring/Casting/Cooling
Charge Capacity: 5 tons of metal charged per hour
Stack ID: Emissions vented through stacks V17, V18, V26, V27, and V28
Control Efficiency: No Control

Potential Emissions* - Pouring/Casting/Cooling Operations

Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	4.2	2.06	0.14	6.0	0.02	0.01		
SCC	30400320	30400320	30400320	30400320	30400320	30400320		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	91.98	45.11	3.07	131.40	0.44	0.22		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00160	0.13020	0.00013	0.00281	0.00055	0.00004	0.00025	0.01617
Source of Em. Factor	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	3.50E-02	2.85E+00	2.76E-03	6.16E-02	1.20E-02	9.20E-04	5.52E-03	3.54E-01

* Organic HAP emissions are accounted for on page 10 of the calculations.

Limited PTE (No control but has production limit) - Pouring/Casting/Cooling Operations

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10*	VOC	CO	SOx	NOx		
Pouring/Casting Emissions (tpy)	42	30.9	1.4	60	0.2	0.1		
Pollutant	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Pouring/Casting Emissions (tpy)	0.01596	1.30200	0.00126	0.02814	0.00546	0.00042	0.00252	0.16170

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions (before control) was calculated using the following equation:
Emissions (tons/yr) =
(Emission Factor, lbs/ton x Charge Capacity, tons metal/hr x 8760 hr/yr) / 2000 lbs/ton

Limited PTE was calculated using the following equation:
Pouring/Casting Emissions (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton

**Appendix A - Emissions Calculations for Interstate Castings
Shakeout, Grinding/Cleaning, Sand Handling, and Shot Blast Operations**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: April 4, 2007

Emission Unit:	EU-06A	EU-06B	EU-06C	
Unit Description:	Casting Shakeout	Table Blast, Shot Blast, 3 Grinders and Cutoff Saw	Sand Handling	
Charge Capacity (tph):	5	5	NA	tons of metal charged per hour
Sand Handling Cap. (tph):	NA	NA	20.63	tons of sand handled per hour
Stack ID:	A	A	A	
Stack Flow Rate (acfm)	20000	20000	20000	
Control Device	Cyclone Baghouse	Baghouse	Baghouse	
Collection Efficiency	0.99	0.99	0.99	
Control Efficiency	0.99	0.99	0.99	

Potential Emissions - (includes shakeout, grinding/cleaning, sand handling, and shot blast operations)

Shakeout								
Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	3.2	2.24	1.2	*	0	0		
SCC	30400331	30400331	30400331	30400331	30400331	30400331		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	70.08	49.06	26.28	0.00	0.00	0.00		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00122	0.09920	0.00010	0.00214	0.00042	0.00003	0.00019	0.01232
Source of Em. Factor	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	2.66E-02	2.17E+00	2.10E-03	4.70E-02	9.11E-03	7.01E-04	4.20E-03	2.70E-01

Grinding/Cleaning						
Pollutant	PM**	PM10	VOC	CO	SOx	NOx
Em. Factor	0.0045	0.0045	0	0	0	0
SCC	30400360	30400360	30400360	30400360	30400360	30400360
Source of Em. Factor	FIRE 6.25					
Units of Em. Factor	lbs/ton metal					
Emissions (tons/yr)	0.10	0.10	0.00	0.00	0.00	0.00

Sand Handling						
Pollutant	PM**	PM10	VOC	CO	SOx	NOx
Em. Factor	3.6	0.54	0	0	0	0
SCC	30400350	30400350	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25					
Units of Em. Factor	lbs/ton sand					
Emissions (tons/yr)	325.29	48.79	0.00	0.00	0.00	0.00

Shot Blast								
Pollutant	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	17	1.7	0	0	0	0		
SCC	30400340	30400340	30400340	30400340	30400340	30400340		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	372.30	37.23	0.00	0.00	0.00	0.00		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00646	0.52700	0.00051	0.01139	0.00221	0.00017	0.00102	0.06545
Source of Em. Factor	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	1.41E-01	1.15E+01	1.12E-02	2.49E-01	4.84E-02	3.72E-03	2.23E-02	1.43E+00

* The CO emissions from shakeout are accounted for in the pouring and cooling calculations found on page 5.
** Assume PM equals PM10.

Allowable Emissions

Pollutant	Rule Cite	gr/dscf	lbs/hr	tons/yr
PM	326 IAC 6.5-1-2(a)	0.03	5.14	22.53

Limited PTE - (includes shakeout, grinding/cleaning, sand handling, and shot blast operations)

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10*	VOC	CO	SOx	NOx		
Stack A Emissions (tpy)	5.22	1.31	11.88	0.00	0.00	0.00		
	Cr	Mn	Co	Ni	As	Se	Cd	Pb
	7.60E-04	6.20E-02	6.00E-05	1.34E-03	2.60E-04	2.00E-05	1.20E-04	7.70E-03
Pollutant	PM	PM10*	VOC	CO	SOx	NOx		
Emissions Not Captured (tpy)	5.27	0.88	0.12	0.00	0.00	0.00		
	Cr	Mn	Co	Ni	As	Se	Cd	Pb
	7.68E-04	6.26E-02	6.06E-05	1.35E-03	2.63E-04	2.02E-05	1.21E-04	7.78E-03
Total Emissions (tpy)	PM	PM10	VOC	CO	SOx	NOx		
	10.49	2.19	12.00	0.00	0.00	0.00		
	Cr	Mn	Co	Ni	As	Se	Cd	Pb
	1.53E-03	1.25E-01	1.21E-04	2.69E-03	5.23E-04	4.02E-05	2.41E-04	1.55E-02

* About 0.59 tpy of these emissions are limited by the 20000 ton metal input; the other 0.72 tpy comes from the sand handling operations that is calculated based on maximum sand handling capacity; all is exhausted through Stack A. The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions was calculated using the following equation:

$$\text{Emissions (tons/yr)} = (\text{Emission Factor, lbs/ton} \times \text{Charge (or Sand) Capacity, tons/hr} \times 8760 \text{ hr/yr}) / 2000 \text{ lbs/ton}$$

Limited PTE was calculated using the following equation(s):

$$\text{Stack A Emissions (tpy)} = [(\text{Emission Factors (shakeout + grinding/cleaning + shot blast), lbs/ton metal} \times 20,000 \text{ tons of Metal per twelve month period}) / 2000 \text{ lbs/ton}] + [(\text{Emission Factor (sand handling), lbs/ton sand} \times 20.63 \text{ tons sand/hr} \times 8760 \text{ hr/yr} / 2000 \text{ lbs/ton})] \times \text{Collection Eff.} \times (1 - \text{Control Eff.})$$

$$\text{Emissions Not Captured (tpy)} = [(\text{Emission Factors (shakeout + grinding/cleaning + shot blast), lbs/ton metal} \times 20,000 \text{ tons of Metal per twelve month period}) / 2000 \text{ lbs/ton}] + [(\text{Emission Factor (sand handling), lbs/ton sand} \times 20.63 \text{ tons sand/hr} \times 8760 \text{ hr/yr})] \times (1 - \text{Collection Eff.})$$

Appendix A - Emissions Calculations for Interstate Castings
Potential HAP Emission Calculations - Pouring, Cooling and Shakeout

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46216
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: March 14, 2007

Material	Maximum Usage (tons/yr)	Acrolein EF (lb/lb)	Benzene EF (lb/lb)	Formaldehyde EF (lb/lb)	Hydrogen Cyanide EF (lb/lb)	Xylenes EF (lb/lb)	Naphthalene EF (lb/lb)	Phenol EF (lb/lb)	Toluene EF (lb/lb)	Total Aromatic Amines EF (lb/lb)	Total Aldehydes EF (lb/lb)	Potential Acrolein Emissions (ton/yr)	Potential Benzene Emissions (ton/yr)	Potential Formaldehyde Emissions (ton/yr)	Potential HCN Emissions (ton/yr)	Potential Xylenes Emissions (ton/yr)	Potential Naphthalene Emissions (ton/yr)	Potential Phenol Emissions (ton/yr)	Potential Toluene Emissions (ton/yr)	Potential Aromatic Amines Emissions (ton/yr)	Potential Aldehyde Emissions (ton/yr)	
Air Set Core Making Line - Pouring, Cooling and Shakeout																						
Resin	65.20	0.00016	0.004534	0.000065	0.000607	0.000283	0.00004	0.000101	0.008826	0.000364	0.017004	0.011	2.979	0.043	0.399	0.186	0.026	0.066	5.799	0.239	11.172	
Core Oil Making Line - Pouring, Cooling and Shakeout																						
Core Oil	32.52	0.000077	0.002344	0.000096	0.000086	0.000526	0.000048	0.000057	0.000478	0.000096	0.000766	0.003	0.076	0.003	0.003	0.017	0.002	0.002	0.016	0.003	0.025	
#1 Shell Sand Molding Line - Pouring, Cooling and Shakeout																						
Resin	3.91	0.000047	0.006667	0.000035	0.010526	0.000702	0.000058	0.002456	0.002807	0.002339	0.000585	0.000	0.026	0.000	0.041	0.003	0.000	0.010	0.011	0.009	0.002	
#2 Shell Sand Molding Line - Pouring, Cooling and Shakeout																						
Resin	3.91	0.000047	0.006667	0.000035	0.010526	0.000702	0.000058	0.002456	0.002807	0.002339	0.000585	0.000	0.026	0.000	0.041	0.003	0.000	0.010	0.011	0.009	0.002	
												0.01	3.11	0.05	0.48	0.21	0.03	0.09	5.84	0.26	11.20	
												Total Potential Emissions (tons/yr)										21.27

METHODOLOGY

Emission factors from the 1994 Modern Casting article titled "Calculating Emission Factors for Pouring, Cooling and Shakeout" by Gary Mosher.
 HAP Emissions = Limited Resin Usage Rate (tons/yr) * 2000 lbs/ton * EF (lb/lb) * 1 tons/2000 lbs

Appendix A - Emissions Calculations for Interstate Castings
Limited HAP Emission Calculations - Pouring, Cooling and Shakeout

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46216
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: March 14, 2007

Material	Limited Usage (tons/yr)	Acrolein EF (lb/lb)	Benzene EF (lb/lb)	Formaldehyde EF (lb/lb)	Hydrogen Cyanide EF (lb/lb)	Xylenes EF (lb/lb)	Naphthalene EF (lb/lb)	Phenol EF (lb/lb)	Toluene EF (lb/lb)	Total Aromatic Amines EF (lb/lb)	Total Aldehydes EF (lb/lb)	Limited Acrolein Emissions (ton/yr)	Limited Benzene Emissions (ton/yr)	Limited Formaldehyde Emissions (ton/yr)	Limited HCN Emissions (ton/yr)	Limited Xylenes Emissions (ton/yr)	Limited Naphthalene Emissions (ton/yr)	Limited Phenol Emissions (ton/yr)	Limited Toluene Emissions (ton/yr)	Limited Aromatic Amines Emissions (ton/yr)	Limited Aldehyde Emissions (ton/yr)	
Air Set Core Making Line - Pouring, Cooling and Shakeout																						
Resin	56.25	0.00016	0.004534	0.000065	0.000607	0.000283	0.00004	0.000101	0.008826	0.000364	0.017004	0.001	0.255	0.004	0.034	0.016	0.002	0.006	0.496	0.020	0.956	
Core Oil Making Line - Pouring, Cooling and Shakeout																						
Core Oil	21.68	0.000077	0.002344	0.000096	0.000086	0.000526	0.000048	0.000057	0.000478	0.000096	0.000766	0.002	0.051	0.002	0.002	0.011	0.001	0.001	0.010	0.002	0.017	
#1 Shell Sand Molding Line - Pouring, Cooling and Shakeout																						
Resin	1.50	0.000047	0.006667	0.000035	0.010526	0.000702	0.000058	0.002456	0.002807	0.002339	0.000585	0.000	0.010	0.000	0.016	0.001	0.000	0.004	0.004	0.004	0.001	
#2 Shell Sand Molding Line - Pouring, Cooling and Shakeout																						
Resin	1.50	0.000047	0.006667	0.000035	0.010526	0.000702	0.000058	0.002456	0.002807	0.002339	0.000585	0.000	0.010	0.000	0.016	0.001	0.000	0.004	0.004	0.004	0.001	
												0.00	0.33	0.01	0.07	0.03	0.00	0.01	0.52	0.03	0.97	
												Total Limited Emissions (tons/yr):										1.97

METHODOLOGY

Emission factors from the 1994 Modern Casting article titled "Calculating Emission Factors for Pouring, Cooling and Shakeout" by Gary Mosher.
 HAP Emissions = Limited Resin Usage Rate (tons/yr) * 2000 lbs/ton * EF (lb/lb) * 1 tons/2000 lbs

**Appendix A - Emissions Calculations for Interstate Castings
Core Making (VOC and HAP Calcs)**

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: #####

Emission Unit IDs: EU-07, EU-08, EU-09A, and EU-09B
 Unit Descriptions: One (1) Air Set Core Making, One (1) Core Oil Core Making, and Two (2) Redford Shell Core Making Machines
 Stack ID: V4, V5, and V38

Air Set Core Making (EU-07)

Maximum Capacity 12,000 pounds of sand per hour
 Limit Capacity 4,500 tons of sand per year

Material Formulation	Quantity at Max. Capacity (lb/hr)	Quantity at Limit Capacity (lb/hr)
100 lb sand	12,000	1027.40
1.25 lb resin	150	12.84
0.25 lb catalyst	30	2.57

Core Oil Core Making (EU-08)

Maximum Capacity 250 pounds of sand per hour
 Limit Capacity 730 tons of sand per year

Material Formulation	Quantity at Max. Capacity (lb/hr)	Quantity at Limit Capacity (lb/hr)
200 lb sand	250	166.67
5.94 lb core oil	7.43	4.95
12.51 lb city water	15.64	10.43
1.31 lb iron oxide	1.64	1.09
7.56 lb cereal binder	9.45	6.30

#1 Redford Shell Core Machine (EU-09A)

Maximum Capacity	35.75 pounds of shell sand per hour	0.89375 pounds of resin per hour
Limit Capacity	60 tons of shell sand per year	1.5 tons of resin per year

#2 Redford Shell Core Machine (EU-09B)

Maximum Capacity	35.75 pounds of shell sand per hour	0.89375 pounds of resin per hour
Limit Capacity	60 tons of shell sand per year	1.5 tons of resin per year

Core Making Formulations*	VOC (% wt)	Furfuryl Alcohol	Benzene (% wt)	Phenol (% wt)	Toluene (% wt)	Formaldehyde (% wt)	Methanol (% wt)
Air Set Core Making							
Resin	78.36	77	0.00	0	0	0.36	1.00
Catalyst	0.10	0.00	0.10	0	0	0	
Core Oil Core Making							
Core Oil	50	0	0	0	0	0	0

*Catalyst wt % furfuryl alcohol was provided by manufacturer; all other formulations are from MSDS's. IDEM, OAQ has approved data showing furfuryl alcohol is a reactive component, and reacts quickly to yield a non-volatile, solid product. The reaction takes place at ambient temperature. Emissions are so small it is difficult to measure any emissions; this is complicated by the fact that the resin system both contains water, and produces some water as a reaction byproduct.

**Appendix A - Emissions Calculations for Interstate Castings
Core Making (VOC and HAP Calcs Continued)**

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: #####

Potential VOC and HAP Emissions - Core Making

	Total VOC (tpy)	Specific HAPs (tpy)					Total HAP (tpy)
		Benzene	Phenol	Toluene	Formaldehyde	Methanol	
Air Set Core Making*							
Resin	13.45	0.00	0.00	0.00	0.05	3.29	3.33
Catalyst	0.13	0.13	0.00	0.00	0.00	0.00	0.13
Core Oil Core Making							
Core Oil	16.26	0.00	0.00	0.00	0.00	0.00	0.00

Redford Shell Core Machine (#1)

Pollutants	VOC	Benzene	Phenol	Toluene
Em. Factor	0.25	0.046	0.127	0.018
Source of Em. Factor	**	**	**	**
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.02	3.60E-03	9.94E-03	1.41E-03

Redford Shell Core Machine (#2)

Pollutants	VOC	Benzene	Phenol	Toluene
Em. Factor	0.25	0.046	0.127	0.018
Source of Em. Factor	**	**	**	**
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.02	3.60E-03	9.94E-03	1.41E-03

* Air Set Core Making calculations should include the following evaporation factors:
2% by weight for furfuryl alcohol (from the Manufacturer, this is a conservative estimate)
2% by weight for formaldehyde (from Form R Reporting of Binder Chemicals Used in Foundries)
50% by weight for methanol (from Form R Reporting of Binder Chemicals Used in Foundries)

** These emission factors came from the minor permit revision F097-15876-00063, issued on April 2, 2004 for the construction of these two redford shell core machines.

Summary of PTE

	TOTAL VOC (tpy)	TOTAL HAP (tpy)
Air Set	13.58	3.46
Core Oil	16.26	0.00
Redford Shell	0.04	0.03

Limited Potential VOC and HAP Emissions - Core Making

	Total VOC (tpy)	Specific HAPs (tpy)					TOTAL HAP (tpy)
		Benzene	Phenol	Toluene	Formaldehyde	Methanol	
Air Set Core Making*							
Resin	1.15	0.00	0.00	0.00	4.05E-03	0.28	0.29
Catalyst	0.01	0.01	0.00	0.00	0.00	0.00	0.01
Core Oil Core Making							
Core Oil	10.84	0.00	0.00	0.00	0.00	0.00	0.00

Redford Shell Core Machine (#1)

Pollutants	VOC	Benzene	Phenol	Toluene
Em. Factor	0.25	0.046	0.127	0.018
Source of Em. Factor	**	**	**	**
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.01	1.38E-03	3.81E-03	5.40E-04

Redford Shell Core Machine (#2)

Pollutants	VOC	Benzene	Phenol	Toluene
Em. Factor	0.25	0.046	0.127	0.018
Source of Em. Factor	**	**	**	**
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.01	1.38E-03	3.81E-03	5.40E-04

* Air Set Core Making calculations should include the following evaporation factors:
2% by weight for furfuryl alcohol (from the Manufacturer, this is a conservative estimate)
2% by weight for formaldehyde (from Form R Reporting of Binder Chemicals Used in Foundries)
50% by weight for methanol (from Form R Reporting of Binder Chemicals Used in Foundries)

** These emission factors came from the minor permit revision F097-15876-00063, issued on April 2, 2004 for the construction of these two redford shell core machines.

Summary of Limited PTE

	TOTAL VOC (tpy)	TOTAL HAP (tpy)
Air Set	1.16	0.30
Core Oil	10.84	0.00
Redford Shell	0.02	0.01

Methodology

Potential VOC and HAP Emissions were calculated using the following equations:

Air Set Core Making VOC Emissions = (Quantity at Max. Capacity, lb/hr) x [(wt % each VOC in Resin) x (each specific % evaporation factor)] x 8760 hr/yr x 1 ton/2000 lb
Core Oil Core Making VOC Emissions = (Quantity at Max. Capacity, lb/hr) x 8760 hr/yr x (wt% VOC in Core Oil) x 1 ton/2000 lb
Redford Shell Machines VOC Emissions = Emission Factor, lbs/sand x Max. lb sand usage/hr x 8760 hr/yr x 1 ton/2000 lb

Limited Potential VOC and HAP Emissions were calculated using the following equations:

Air Set Core Making VOC Emissions = (Quantity at Limit Capacity, lb/hr) x [(wt % each VOC in Resin) x (each specific % evaporation factor)] x 8760 hr/yr x 1 ton/2000 lb
Core Oil Core Making VOC Emissions = (Quantity at Limit Capacity, lb/hr) x 8760 hr/yr x (wt% VOC in Core Oil) x 1 ton/2000 lb
Redford Shell Machines VOC Emissions = Emission Factor, lbs/sand x Limit lb sand usage/hr x 8760 hr/yr x 1 ton/2000 lb

**Appendix A - Emissions Calculations for Interstate Castings
Core Making (PM, PM10, SOx, and NOx Calculations)**

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: #####

Emission Unit: EU-07, EU-08, EU-09A, and EU-09B
Unit Description: One (1) Air Set Core Making, One (1) Core Oil Core Making, and Two (2) Redford Shell Core Making Machines
Stack ID: V4, V5, and V38

Air Set Core Making (EU-07)

Maximum Capacity 12,000 pounds of sand per hour
Limit Capacity 4,500 tons of sand per year

Core Oil Core Making (EU-08)

Maximum Capacity 250 pounds of sand per hour
Limit Capacity 730 tons of sand per year

#1 Redford Shell Core Machine (EU-09A)

Maximum Capacity 35.75 pounds of shell sand per hour
Limit Capacity 60 tons of shell sand per year

#2 Redford Shell Core Machine (EU-09B)

Maximum Capacity 35.75 pounds of shell sand per hour
Limit Capacity 60 tons of shell sand per year

PTE Other Criteria Pollutant Emissions - Core Making (continued from previous page)

Air Set Core Making

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	94.61	14.19	0.00	0.00

Core Oil Core Making

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	1.97	0.30	0.00	0.00

Redford Shell Core Machine (#1)

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.28	0.04	0.00	0.00

Redford Shell Core Machine (#2)

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.28	0.04	0.00	0.00

Summary of PTE - All Core Making Machines

Pollutant	PM	PM10	SOx	NOx
All Core Making Machines	97.14	14.57	0.00	0.00

Limited PTE (Sand Usage Limits) - All Core Making Machines

Air Set Core Making

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	8.10	1.82	0.00	0.00

Core Oil Core Making

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	1.31	0.30	0.00	0.00

Redford Shell Core Machine (#1)

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.11	0.02	0.00	0.00

Redford Shell Core Machine (#2)

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.11	0.02	0.00	0.00

Summary of Limited PTE - All Core Making Machines

Pollutant	PM	PM10	SOx	NOx
All Core Making Machines	9.63	2.17	0.00	0.00

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions were calculated using the following equations:

Emissions (tons/yr) = (Maximum Capacity, lb sand/hr) x 1 ton/2000 lb x (Emission Factor, lbs/ton sand) x 8760 hr/yr x 1 ton/2000 lb

Limited Potential Emissions were calculated using the following equations:

Emissions (tons/yr) = (Limit Capacity, ton sand/hr) x (Emission Factor, lbs/ton sand) x 8760 hr/yr x 1 ton/2000 lb

Appendix A - Emissions Calculations for Interstate Castings

HAP Calculations for NG Combustion

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: February 19, 2007

Potential HAP Emissions from pouring, cooling, shakeout, and NG combustion

Misc. Combustion HAPs	Maximum Capacity	Units	Combustion HAP Emission Factor (lb HAP/lb input)	PTE (ton/yr)	Total Misc. Combustion HAP (ton/yr)
Process:					
Natural Gas Combustion ^{a,b}	26.8	MMBtu/hr	1.89 lbs/MMCF	0.222	0.22

^a Emission factor for Natural Gas Combustion is from FIRE 6.25.

^b Natural Gas Combustion:

air set core oven	0.115 MMBtu/hr
oil sand core oven	1.6 MMBtu/hr
old conference room boiler	0.106 MMBtu/hr
preheater	25 MMBtu/hr
TOTAL	26.821 MMBtu/hr

Methodology

PTE Misc. Combustion HAPs (Natural Gas Combustion) (tons/yr) = Maximum Capacity (MMBtu/hr) x MMCF/1000 MMBtu x Emission Factor (lb HAP/MMCF x 8760 (hrs/yr) x 1 ton/2,000 lbs

Company Name: Interstate Castings, Inc.
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: #####

Insignificant Fugitive Emissions from Road Surfaces

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E = emission factor (lb/vehicle mile traveled)
 sL = road surface silt loading (g/m²) = 0.6 (g/m²) (AP-42, Table 13.2.1-3)
 w = mean vehicle weight (tons) = 25.7 tons
 k = empirical constant = 0.082 for PM and 0.016 for PM10
 a = empirical constant = 0.65
 b = empirical constant = 1.5
 C = emission factor for exhaust, brake and tire wear 0.00047 for PM and PM10
 p = number of days per year with 0.01 inches precipitation 120

PM Emission Factor = $(0.082 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460) = 0.86$ lbs/mile

PM10 Emission Factor = $(0.016 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460) = 0.17$ lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	*Ave Weight of Vehicles (tons)	*Trip Number (trips/yr)	* Round Trip Distance (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)
12k pound vehicle	6.0	235	0.10	24	22.86%	1.37	1.01E-02	1.97E-03
34k pound vehicle	17.0	107	0.10	11	10.41%	1.77	4.61E-03	8.97E-04
30k pound vehicle	15.0	98	0.10	10	9.53%	1.43	4.22E-03	8.21E-04
34k pound vehicle	17.0	147	0.20	29	28.60%	4.86	1.27E-02	2.46E-03
40k pound vehicle	20.0	147	0.20	29	28.60%	5.72	1.27E-02	2.46E-03
Total				103	100%	15.2	4.42E-02	8.62E-03

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/yr) x Round-Trip Distance (mile/trip)
 Traffic Component (%) = VMT / Total VMT
 Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)
 PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

**Appendix A - Emissions Calculations for Interstate Castings
Insignificant Natural Gas Combustion Devices**

Company Name: Interstate Castings
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: #####

Insignificant Natural Gas Combustion Devices

Process	MMBtu/hr	Process	MMBtu/hr
Core Oven	1.6	Air-set conveyor Infra-red	0.024
Maintenance West Space Heater	0.225	Core Room Core Prep Infra-red	0.024
Maintenance East Space Heater	0.225	Bench Core Table Infra-red	0.024
Chipping Booth Space Heater	0.2	Bench Core Table Infra-red	0.024
Old Dock Space Heater	0.4	Core Assembly Table Infra-red	0.024
Maintenance Shower Room Furnace	0.125	Air-set Core & Mold assembly Table Infrared	0.024
Old Conference Room Boiler	0.106	Air-set Core & Mold assembly Table Infrared	0.024
Airset Oven	0.115	Air-set Mold Assembly Infrared	0.024
Airset Torpedo	0.4	Air-set Mold Assembly Infrared	0.024
Airset Torpedo	0.4	Sinto Infro-red (basement)	0.024
Bull Ladle Torch -2"	0.279	Sinto Infro-red (basement)	0.024
Control Room Furnace	0.125	#9 Molding Machine Infra-red (overhead)	0.024
Core Dip Drying Table Infra-red	0.048	#9 Molding Machine Infra-red (basement)	0.024
Ladle Torch 2" Floor Molding	0.279	Molding Line Setup Table Infra-red (basement)	0.024
Ladle Torch 2" Floor Molding	0.279	#8 Molding Machine Infra-red (basement)	0.024
Ladle Torch 2" Floor Molding	0.279	#8 Molding Machine Infra-red (overhead)	0.024
Bull Ladle Torch -2"	0.279	#7 Molding Machine Infra-red (basement)	0.024
Heavey Chip Torpedo	0.4	#7 Molding Machine Infra-red (overhead)	0.024
Shipping Office North Infra-red	0.014	#6 Molding Machine Infra-red (basement)	0.024
Shipping Office South Infra-red	0.014	#6 Molding Machine Infra-red (overhead)	0.024
Core Assembly Table Heater	0.014	#5 Molding Machine Infra-red (basement)	0.024
Muller Trash Chute Torch	0.005	#5 Molding Machine Infra-red (overhead)	0.024
Muller Gearbox Infra-red	0.024	#4 Molding Machine Infra-red (basement)	0.024
Muller Manifold Infra-red	0.024	#4 Molding Machine Infra-red (overhead)	0.024
Compressor Water Manifold Infra-red	0.024	#3 Molding Machine Infra-red (basement)	0.024
Air-set room space heater	0.15	#3 Molding Machine Infra-red (overhead)	0.024
Air-set room Infra-red	0.024	#1 Molding Machine Infra-red (basement)	0.024
Air-set room Infra-red	0.024	#1 Molding Machine Infra-red (overhead)	0.024
Air-set conveyor Infra-red	0.024	Ladle Prep Area Sink Infra-red	0.024
Air-set conveyor Infra-red	0.024	#2 Stand Grinder Infra-red	0.024
Floor Molding North Station Infra-red	0.024	#1 Stand Grinder Infra-red	0.024
Floor Molding South Station Infra-red	0.024	Brinell Tester Infrared	0.024
Floor Molding Water Barell Infra-red	0.024	Single Pedestal Dual Wheel Grinder Infra-red	0.024
Floor Molding Simpson Muller Infra-red	0.024	Floor Molding Rollaround Triple Unit Infra-red	0.024

Total Heat Input Capacity 7.041 MMBtu/hr
 Total Max Firing Rate 0.006902941 MMCF/hr

Pollutants	PM	PM10	VOC	CO	SOx	NOx	Pb
Em. Factor	7.6	7.6	5.5	84	0.6	100	0.0005
SCC	10200603	10200603	10200603	10200603	10200603	10200603	10200603
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/mmcf						
Emissions (tons/yr)	0.23	0.23	0.17	2.54	0.02	3.02	0.00

Potential HAPs

Potential Throughput
MMCF/yr

60.5

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMCF	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	6.35E-05	3.63E-05	2.27E-03	5.44E-02	1.03E-04

HAPs - Metals

	Lead	Cadmuim	Chromium	Manganese	Nickel
Emission Factor in lb/MMCF	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.51E-05	3.33E-05	4.23E-05	1.15E-05	6.36E-05

Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (AP-42 Supplement D 3/98)

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All Emission factors are based on normal firing.

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
 Potential Emission in tons/yr = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 Limited Potential Emission in tons/yr = Limited Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: #####

Insignificant Emissions From Wood Working

Description: (1) ban saw and (1) oscillating vertical sander
Control Device: Dust Collector
Air Flowrate: 550 acfm

PTE of PM/PM10 before Control (tons/yr)

Pollutant	PM	PM-10
Tons/yr	61.9	61.9

PTE of PM/PM10 after Control (tons/yr)

Pollutant	PM	PM-10
Factor	0.03	0.03
Units	gr/dscf	gr/dscf
Tons/yr	0.62	0.62

Controlled PM emissions were assumed to be equivalent to 0.03 gr/dscf
PM emissions were assumed to be equivalent to PM-10
Baghouse efficiency assumed to be 99%.

Methodology

$$\text{PTE of PM/PM10 after Control (tons/yr)} = \text{Grain Loading (gr/dscf)} \times \text{Max. Air Flow Rate (scfm)} \times 60 \text{ mins/hr} \times 1/7000 \text{ lb/gr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs}$$

$$\text{PTE of PM/PM10 before Control (tons/yr)} = \text{PTE of PM/PM10 after Control (tons/yr)} / (1 - \text{Control Efficiency})$$

Appendix A - Emissions Calculations Summary for Interstate Castings

Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218

FESOP Permit: 097-18317-00063

Reviewer: ERG/JR

Date: February 19, 2007

Summary of Potential Emissions (TPY)

Processes	PM	PM10	VOC	CO	SOx	NOx	Pb
Furnaces (EU-01)	19.7	18.8	0.00	0.00	0.00	0.00	2.19
Charging (EU-02)	13.1	7.9	0.00	0.00	0.00	0.00	0.05
Preheater (EU-03)	0.83	1.25	0.60	9.20	0.07	11.0	0.00
Inoculation (EU-04)	39.4	39.4	0.00	0.00	0.00	0.00	0.15
Pouring/Casting/Cooling (EU-05)	92.0	45.1	3.07	131.4	0.44	0.22	0.35
Shakeout (EU-06A)	70.1	49.1	26.3	0.00	0.00	0.00	0.27
Grinding/Cleaning (EU-06B)	0.10	0.10	0.00	0.00	0.00	0.00	0.00
Sand Handling (EU-06C)	325.3	48.8	0.00	0.00	0.00	0.00	0.00
Shot Blast (EU-06B)	372.3	37.2	0.00	0.00	0.00	0.00	1.43
Core Making - Air Set (EU-07)	94.6	14.2	13.6	0.00	0.00	0.00	0.00
Core Making - Core Oil (EU-08)	1.97	0.30	16.3	0.00	0.00	0.00	0.00
Core Making - Redford Shell Sand (EU-09A and EU-09B)	0.56	0.08	0.04	0.00	0.00	0.00	0.00
Insignificant - Paved Roads	0.04	0.01	0.00	0.00	0.00	0.00	0.00
Insignificant - Natural Gas Combustion	0.23	0.23	0.17	2.54	0.02	3.02	0.00
Insignificant - Wood Working	61.9	61.9	0.00	0.00	0.00	0.00	0.00
Total Potential Emissions	1092.2	324.4	60.0	143.1	0.52	14.2	4.45

Processes	Mn	Cr	Co	Ni	As	Se	Cd
Furnaces (EU-01)	0.61	7.49E-03	5.91E-04	1.32E-02	2.56E-03	1.97E-04	1.18E-03
Charging (EU-02)	0.41	4.99E-03	3.94E-04	8.80E-03	1.71E-03	1.31E-04	7.88E-04
Preheater (EU-03)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Inoculation (EU-04)	1.22	1.50E-02	1.18E-03	2.64E-02	5.12E-03	3.94E-04	2.37E-03
Pouring/Casting/Cooling (EU-05)	2.85	3.50E-02	2.76E-03	6.16E-02	1.20E-02	9.20E-04	5.52E-03
Shakeout (EU-06A)	2.17	2.66E-02	2.10E-03	4.70E-02	9.11E-03	7.01E-04	4.20E-03
Grinding/Cleaning (EU-06B)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sand Handling (EU-06C)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Shot Blast (EU-06B)	11.5	1.41E-01	1.12E-02	2.49E-01	4.84E-02	3.72E-03	2.23E-02
Core Making (EU-07, EU-08, EU-09A, and EU-09B)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Insignificant - Natural Gas Combustion	1.15E-05	3.33E-05	0.00E+00	6.35E-05	0.00E+00	0.00E+00	3.33E-05
Total Potential Emissions	18.8	0.23	0.02	0.41	0.08	0.01	0.04
Total Metal HAP			24.03				

Processes	Benzene	Phenol	Toluene	Formaldehyde	Methanol	HCN	Aldehydes	other*
Core Making - Air Set (EU-07)	0.13	0	0	0.05	3.29	0	0	0
Core Making - Core Oil (EU-08)	0	0	0	0	0	0	0	0
Core Making - Redford Shell Sand (EU-09A and EU-09B)	7.20E-03	1.99E-02	2.82E-03	0	0	0	0	0
Pouring/Cooling/Shakeout (EU-05 and EU-06A)	3.11	0.09	5.84	0.05	0	0.48	11.20	0.51
Insignificant - Natural Gas Combustion	6.35E-05	0.00E+00	1.03E-04	2.27E-03	0.00E+00	0	0	0.05
Total PTE	3.25	0.11	5.84	0.10	3.29	0.48	11.20	0.57
Total Organic HAP			24.82					
TOTAL HAP			48.85					

Summary of Limited Potential to Emit (TPY)

Processes	PM	PM10	VOC*	CO	SOx	NOx	Pb
Furnaces (EU-01) - Stack B Emissions	6.68	6.39	0.00	0.00	0.00	0.00	2.17
Furnaces (EU-01) - Emissions Not Captured	0.09	0.09	0.00	0.00	0.00	0.00	0.02
Charging (EU-02)	6.00	5.40	0.00	0.00	0.00	0.00	0.05
Preheater (EU-03)	0.83	1.25	0.60	9.20	0.07	11.0	0.00
Inoculation (EU-04)	18.0	27.0	0.00	0.00	0.00	0.00	0.15
Pouring/Casting/Cooling (EU-05)	42.0	30.9	3.07	60.0	0.44	0.22	0.35
Shakeout/Cleaning/Sand Handling/Shot Blast (EU-06A, EU-06B, EU-06B)							
Stack A Emissions	5.22	1.31	26.0	0.00	0.00	0.00	1.68
Shakeout/ Cleaning/ Sand Handling/ Shot Blast (EU-06A, EU-06B, EU-06B)							
Emissions Not Captured	5.27	0.88	0.26	0.00	0.00	0.00	0.02
Core Making - Air Set (EU-07)	8.10	1.82	13.6	0.00	0.00	0.00	0.00
Core Making - Core Oil (EU-08)	1.31	0.30	16.3	0.00	0.00	0.00	0.00
Core Making - Redford Shell Sand (EU-09A and EU-09B)	0.22	0.05	0.04	0.00	0.00	0.00	0.00
Insignificant - Paved Roads	4.42E-02	8.62E-03	0.00	0.00	0.00	0.00	0.00
Insignificant - Natural Gas Combustion	0.23	0.23	0.17	2.54	0.02	3.02	0.00
Insignificant - Wood Working	0.62	0.62	0.00	0.00	0.00	0.00	0.00
Total Limited PTE	94.6	76.2	60.0	71.7	0.52	14.2	4.45

Processes	Mn	Cr	Co	Ni	As	Se	Cd
Furnaces (EU-01) - Stack B Emissions	2.07E-01	7.41E-03	5.85E-04	1.31E-02	2.54E-03	1.95E-04	1.17E-03
Furnaces (EU-01) - Emissions Not Captured	2.79E-03	7.49E-05	5.91E-06	1.32E-04	2.56E-05	1.97E-06	1.18E-05
Charging (EU-02)	1.86E-01	4.99E-03	3.94E-04	8.80E-03	1.71E-03	1.31E-04	7.88E-04
Preheater (EU-03)	0.00E+00						
Inoculation (EU-04)	5.58E-01	1.50E-02	1.18E-03	2.64E-02	5.12E-03	3.94E-04	2.37E-03
Pouring/Casting/Cooling (EU-05)	1.30E+00	3.50E-02	2.76E-03	6.16E-02	1.20E-02	9.20E-04	5.52E-03
Shakeout/Cleaning/Sand Handling/Shot Blast (EU-06A, EU-06B, EU-06B)							
Stack A Emissions	6.20E-02	1.66E-01	1.32E-02	2.93E-01	5.69E-02	4.38E-03	2.62E-02
Shakeout/ Cleaning/ Sand Handling/ Shot Blast (EU-06A, EU-06B, EU-06B)							
Emissions Not Captured	6.26E-02	1.68E-03	1.33E-04	2.96E-03	5.75E-05	4.42E-05	2.65E-04
Core Making (EU-07, EU-08, EU-09A, and EU-09B)	0.00E+00						
Insignificant - Natural Gas Combustion	1.15E-05	3.33E-05	0.00E+00	6.35E-05	0.00E+00	0.00E+00	3.33E-05
Total Limited PTE	2.38	0.23	0.02	0.41	0.08	0.01	0.04
Total Metal HAP			7.60				

Processes	Benzene	Phenol	Toluene	Formaldehyde	Methanol	HCN	Aldehydes	other*
Core Making - Air Set (EU-07)	1.31E-01	0	0	4.73E-02	3.29	0	0	0
Core Making - Core Oil (EU-08)	0	0	0	0	0	0	0	0
Core Making - Redford Shell Sand (EU-09A and EU-09B)	7.20E-03	1.99E-02	2.82E-03	0	0	0	0	0
Pouring/Cooling/Shakeout (EU-05 and EU-06A)	0.33	0.01	0.52	0.01	0	0.07	0.97	0.04
Insignificant - Natural Gas Combustion	6.35E-05	0	1.03E-04	2.27E-03	0	0	0	0.05
Total Limited PTE	0.46	0.03	5.18E-01	5.54E-02	3.29	0.07	0.97	0.09
Total Organic HAP			5.49					
TOTAL HAP			13.09					

* Other organics which may include Acrolein, Naphthalene, and Aromatic Amines.

**Indiana Department of Environmental Management
Office of Air Quality
and
Indianapolis Office of Environmental Services**

Technical Support Document (TSD) for a
Federally Enforceable Operating Permit (FESOP) Renewal

Source Background and Description

Source Name:	Interstate Castings, Inc.
Source Location:	3823 Massachusetts Ave, Indianapolis, Indiana 46218
County:	Marion
SIC Code:	3321
Operation Permit No.:	F097-10170-00063
Operation Permit Issuance Date:	August 17, 1999
Permit Renewal No.:	F097-18317-00063
Permit Reviewer:	ERG/JR

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) and Indianapolis Office of Environmental Services (OES) have reviewed a FESOP renewal application from Interstate Castings, Inc. relating to the operation of gray and ductile iron foundry.

Permitted Emission Units and Pollution Control Equipment

This source consists of the following emission units and pollution control devices:

- (a) Melt Operations, installed in 1972, consisting of the following:
- (1) Two (2) electric induction furnaces, collectively identified as EU-01, with emissions collected by a canopy hood located directly over the furnaces and controlled by a settling tank followed by a cyclone which exhausts through one stack identified as stack B. Only one furnace can be operated at any time because there is only one transformer to supply electrical energy;
 - (2) One (1) charge handling system, identified as EU-02, with a maximum charge capacity of 5 tons of metal per hour. The maximum capacity of the charge handling system is limited by the source's ability to melt metal;
 - (3) One (1) natural gas preheater, identified as EU-03, with a maximum heat input capacity of 25 million Btu per hour; and
 - (4) One (1) reaction/holding ladle, identified as EU-04, where inoculation takes place.

Emissions from the charge handling system, preheater, and holding ladle are collected by the general furnace area ventilation system that exhausts through two uncontrolled stacks identified as stacks V11 and V12.

- (b) Pouring and Cooling Operations, collectively identified as EU-05, where the molten metal from the melting operation are poured from ladles into molds and allowed to cool. These

facilities were installed in the 1930s and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located on the ceiling above the pouring deck and exhaust through uncontrolled stacks V17, V18, V26, V27, and V28.

- (c) Shakeout Operations, collectively identified as EU-06A, where the molding sand is separated from the casting by mechanical shaking. These units were installed in 1972 and have a maximum throughput of 5 tons of metal per hour. Emissions are collected by hoods located over the shakeout area and controlled by a cyclone, identified as CE-C, in series with a dust collector, identified as CE-A; exhausting through stack A.
- (d) Casting Cleaning Operations, collectively identified as EU-06B, with a maximum throughput of 5 tons of metal per hour, consisting of the following:
 - (1) One (1) table blast installed in 1981;
 - (2) One (1) shot blast machine installed in June 1960;
 - (3) Five (5) grinders installed in 1960; and
 - (4) One (1) cutoff saw installed in 1981.

Emissions are collected by various hoods located throughout the casting cleaning operation and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

- (e) Sand Handling Operations, collectively identified as EU-06C, installed prior to 1967 and modified in 1998 and in 2000, with a maximum capacity of 20.63 tons of sand per hour, consisting of the following:
 - (1) One (1) sand muller;
 - (2) Thirteen (13) hopper stations;
 - (3) One (1) sand elevator;
 - (4) One (1) sand tank;
 - (5) One (1) sand cooler;
 - (6) Seven (7) belts;
 - (7) One (1) molding line consisting of a B & P 16 X 20 mold machine, constructed in 2002, with a maximum production capacity of 80 molds per hour, each mold weighing 140 pounds; and
 - (8) One (1) molding line consisting of a Sinto FB03 20 X 24 mold machine, constructed in 1998, with a maximum production capacity of 80 molds per hour, each mold weighing 240 pounds.

Emissions are collected by various hoods located throughout the sand handling process line and are controlled by a dust collector, identified as CE-A, which exhausts through stack A.

- (f) Core Making Operations consisting of the following three (3) core making processes:
 - (1) Two (2) Redford shell core machines identified as EU-09A and EU-09B, each with a maximum capacity 35.75 pounds of shell sand per hour and constructed in February 2002;

- (2) One (1) air set core making process, identified as EU-07, constructed in 1982, with a maximum operating capacity of 0.5 tons of cores per hour. In the air set core making process, sand, catalyst, and resin are blended together in a sand mixer. Following blending, the blended sand is placed in the core boxes. Cores are then formed into the desired shape in the core machine. If required, the cores are placed in the core oven in order to harden the cores. The air set core oven is fired with natural gas and has a maximum heat input capacity of 0.115 million Btu per hour; and
- (3) One (1) oil sand core making process, identified as EU-08, constructed in 1958, with a maximum operating capacity of 0.05 tons of cores per hour. In the oil core making process, sand and core oil are blended together in a sand mixer and placed in core molds to produce the desired shape. If required, the oil cores are then baked in a core oven in order to harden and strengthen the cores. The oil sand core oven is fired with natural gas and has a maximum heat input capacity of 1.6 million Btu per hour.

Emissions are collected by building ventilation hoods located in the core making area and exhaust through uncontrolled stacks V4, V5, and V38.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Insignificant Activities

The source includes the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Old Conference Room Boiler, with a heat input capacity of 0.106 MMBtu/hr. [326 IAC 6.5-1-2(b)(3)]
- (b) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6.5-1]
- (c) Grinding and machining operations controlled with fabric filters, scrubbers, mist collectors, wet collectors and electrostatic precipitators with a design grain loading of less than or equal to 0.03 grains per actual cubic foot and a gas flow rate less than or equal to 4000 actual cubic feet per minute, including the following: deburring; buffing; polishing; abrasive blasting; pneumatic conveying; and woodworking operations.
 - (1) Wood working operation consisting of one (1) bandsaw and one (1) oscillating vertical sand. The emissions from this operation are controlled by a dust collector with a design flow rate of 55 cubic feet per minute. [326 IAC 6.5-1]
- (d) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]
- (e) Space heaters, process heaters, or boilers using the following fuels.
 - (1) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) Btu per hour.
 - (A) Core Oven, with a heat input capacity of 1.6 MMBtu/hr.
 - (B) Maintenance West Space Heater, with a heat input capacity of 0.225 MMBtu/hr.
 - (C) Maintenance East Space Heater, with a heat input capacity of 0.225 MMBtu/hr.

- (D) Chipping Booth Space Heater, with a heat input capacity of 0.2 MMBtu/hr.
- (E) Old Dock Space Heater, with a heat input capacity of 0.4 MMBtu/hr.
- (F) Maintenance Shower Room Furnace, with a heat input capacity of 0.125 MMBtu/hr.
- (G) Airset Oven, with a heat input capacity of 0.115 MMBtu/hr.
- (H) Airset Torpedo, with a heat input capacity of 0.4 MMBtu/hr.
- (I) Airset Torpedo, with a heat input capacity of 0.4 MMBtu/hr.
- (J) Bull Ladle Torch -2", with a heat input capacity of 0.279 MMBtu/hr.
- (K) Control Room Furnace, with a heat input capacity of 0.125 MMBtu/hr.
- (L) Core Dip Drying Table Infra-red, with a heat input capacity of 0.048 MMBtu/hr.
- (M) Ladle Torch 2" Floor Molding, with a heat input capacity of 0.279 MMBtu/hr.
- (N) Ladle Torch 2" Floor Molding, with a heat input capacity of 0.279 MMBtu/hr.
- (O) Ladle Torch 2" Floor Molding, with a heat input capacity of 0.279 MMBtu/hr.
- (P) Bull Ladle Torch -2", with a heat input capacity of 0.279 MMBtu/hr.
- (Q) Heavy Chip Torpedo, with a heat input capacity of 0.4 MMBtu/hr.
- (R) Shipping Office North Infra-red, with a heat input capacity of 0.014 MMBtu/hr.
- (S) Shipping Office South Infra-red, with a heat input capacity of 0.014 MMBtu/hr.
- (T) Core Assembly Table Heater, with a heat input capacity of 0.014 MMBtu/hr.
- (U) Muller Trash Chute Torch, with a heat input capacity of 0.005 MMBtu/hr.
- (V) Muller Gearbox Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (W) Muller Manifold Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (X) Compressor Water Manifold Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (Y) Air-set room space heater, with a heat input capacity of 0.15 MMBtu/hr.
- (Z) Air-set room Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (AA) Air-set room Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (BB) Air-set conveyor Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (CC) Air-set conveyor Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (DD) Air-set conveyor Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (EE) Core Room Core Prep Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (FF) Bench Core Table Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (GG) Bench Core Table Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (HH) Core Assembly Table Infra-red, with a heat input capacity of 0.024 MMBtu/hr.

- (II) Air-set Core & Mold assembly Table Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (JJ) Air-set Core & Mold assembly Table Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (KK) Air-set Mold Assembly Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (LL) Air-set Mold Assembly Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (MM) Sinto Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (NN) Sinto Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (OO) #9 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (PP) #9 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (QQ) Molding Line Setup Table Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (RR) #8 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (SS) #8 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (TT) #7 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (UU) #7 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (VV) #6 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (WW) #6 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (XX) #5 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (YY) #5 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (ZZ) #4 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (AAA) #4 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (BBB) #3 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (CCC) #3 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (DDD) #1 Molding Machine Infrared (basement), with a heat input capacity of 0.024 MMBtu/hr.
- (EEE) #1 Molding Machine Infrared (overhead), with a heat input capacity of 0.024 MMBtu/hr.
- (FFF) Ladle Prep Area Sink Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (GGG) #2 Stand Grinder Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (HHH) #1 Stand Grinder Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (III) Brinell Tester Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (JJJ) Single Pedestal Dual Wheel Grinder Infrared, with a heat input capacity of 0.024 MMBtu/hr.
- (KKK) Floor Molding Rollaround Triple Unit Infrared, with a heat input capacity of 0.024 MMBtu/hr.

- (LLL) Floor Molding North Station Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (MMM) Floor Molding South Station Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (NNN) Floor Molding Water Barell Infra-red, with a heat input capacity of 0.024 MMBtu/hr.
- (OOO) Floor Molding Simpson Muller Infra-red, with a heat input capacity of 0.024 MMBtu/hr.

- (2) Propane or liquified petroleum gas or butane-fired combustion sources with heat input equal to or less than six million (6,000,000) Btu per hour.
 - (A) Payloader, 61 HP
 - (B) Hand Torch unit for mold drying, 0.3 MMBtu/hr

- (3) Fuel oil-fired combustion sources with heat input equal to or less than two million (2,000,000) Btu per hour and firing fuel containing less than five-tenths (0.5) percent sulfur by weight.
 - (A) Dayton Salamader, 0.6 MMBtu/hr
 - (B) Dayton Salamader, 0.055 MMBtu/hr

- (f) Equipment powered by internal combustion engines of capacity equal to or less than 500,000 Btu/hour, except where total capacity of equipment operated by one stationary source exceeds 2,000,000 Btu/hour.

- (g) Combustion source flame safety purging on startup.

- (h) A gasoline fuel transfer and dispensing operation handling less than or equal to 1,300 gallons per day, such as filling of tanks, locomotives, automobiles, having a storage capacity less than or equal to 10,500 gallons.

- (i) The following VOC and HAP storage containers:
 - (1) Storage tanks with capacity less than or equal to 1,000 gallons and annual throughputs less than 12,000 gallons.
 - (2) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids.

- (j) Closed loop heating and cooling systems.

- (k) Infrared cure equipment.

- (l) Noncontact cooling tower systems with forced and induced draft cooling tower system not regulated under a NESHAP.

- (m) Replacement or repair of electrostatic precipitators bags in baghouses and filters in other air filtration equipment.

- (n) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

- (o) A laboratory as defined in 326 IAC 2-7-1(21)(D).

Existing Approvals

The source is currently operating under FESOP 097-10170-00063, issued on August 17, 1999 and the following:

- (a) FESOP 097-13081-00063 Reopening, issued on February 2, 2002; and
- (b) Minor Permit Revision 097-15876-00063 issued on April 2, 2004.

The following terms and conditions from previous approvals have been revised in this FESOP:

- (a) Conditions D.1.1, D.2.1, D.3.1, D.4.1, and D.5.1 from FESOP F097-10170-00063, issued on August 17, 1999.

Revised Conditions:

The revised conditions reflect 326 IAC 6.5-1-2 instead of 326 IAC 6-1-2.

Reason Modified:

326 IAC 6-1-2 has been repealed; the particulate emission limitations are now codified in 326 IAC 6.5-1-2. In addition, Condition D.1.1 was revised to include all of the melting operations.

- (b) Condition D.1.3 from FESOP F097-10170-00063, issued on August 17, 1999:
Pursuant to 326 IAC 2-8-4(1), Particulate Matter Less than 10 Microns in Aerodynamic Diameter (PM10) emissions from the two induction furnaces are limited as follows:
 - (1) The PM10 emissions from the two induction furnaces shall not exceed 5.14 pounds per hour. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
 - (2) The amount of metal melted per twelve consecutive month period shall not exceed 20,000 tons. This throughput limit is equivalent to:
 - (A) Ten and two tenths (10.2) tons of PM10 from the furnace emissions exhausted out stack B.
 - (B) Twenty two (22) tons of PM10 from building fugitive emissions associated with the charge handling, preheater, induction furnace, and inoculation operations

Compliance with this Condition and Condition C.1 of this permit shall make the Part 70 Operating Permit regulation 326 IAC 2-7 not applicable.

Revised Condition:

Pursuant to 326 IAC 2-8-4, the PM10 emissions from the melt operations are limited as follows:

- (1) The amount of metal melted at the two (2) electric induction furnaces shall be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.
- (2) The PM10 emissions from the two (2) electric induction furnaces shall not exceed 0.64 lbs PM10/ton metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
- (3) The PM10 emissions from the charge handling and inoculation processes exhausting through stacks V11 and V12 shall not exceed 3.24 lbs PM10/ton metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.

- (4) The Manganese emissions from the two (2) electric induction furnaces (Stack B) shall not exceed 0.0207 lbs Manganese/ton metal.
- (5) The Manganese emissions from the charge handling, and inoculation processes exhausting through stacks V11 and V12 shall not exceed 7.44E-02 lbs Manganese/ton metal.

Combined with the PM10 and Manganese emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons per year, the Manganese emissions from the entire source are limited to less than 10 tons per year and total HAPs emissions from the entire source are less than 25 tons per year. Therefore, compliance with this Condition and Conditions D.2.2, D.3.2, D.4.2, and D.5.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7), 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), 326 IAC 2-4.1(MACT), and 40 CFR 63, Subpart EEEEE not applicable.

Reason Modified:

In order to facilitate compliance determination and to make the existing limits practically enforceable, emission limits were revised to reflect lb per ton limits instead of ton per year. In addition, these limits were modified because of new calculations and updated emission factors. Previously, the amount PM10 emissions were incorrectly based on the allowed pursuant to 326 IAC 6.5-1-2(e) and a maximum hours of operation. These calculations were revised to reflect the metal usage limit.

- (c) Condition D.2.2 from FESOP F097-10170-00063, issued on August 17, 1999:
The amount of metal melted per twelve consecutive month period shall be limited to 20,000 tons. This throughput limit is equivalent 42 tons of PM10 emissions from pouring and cooling operations per twelve consecutive month period. Compliance with this Condition and Condition C.1 of this permit shall make the Part 70 Operating Permit regulation 326 IAC 2-7 not applicable.

Revised Condition:

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits:

- (1) The PM10 emissions from the pouring and cooling operations exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 3.09 lbs PM10/ton Metal. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
- (2) The combined CO emissions from the pouring and cooling operations exhausting through stacks V17, V18, V26, V27, and V28 and the shakeout operations exhausting through stack A as described in Section D.3 shall not exceed 6.0 lbs CO/ton Metal.
- (3) The Manganese emissions from the pouring and cooling operations exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 0.13 lbs Manganese/ton metal.

Combined within the PM10, CO, and Manganese emissions from other emission units, the PM10 and CO emissions from the entire source are limited to less than 100 tons per year, the Manganese emissions from the entire source are limited to less than 10 tons per year and total HAPs emissions from the entire source are less than 25 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.3.2, D.4.2 and D.5.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7), 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), and 40 CFR 63, Subpart EEEEE not applicable.

Reason Modified:

In order to facilitate compliance determination and to make the existing limits practically enforceable, emission limits were revised to reflect lb per ton limits instead of ton per year. In addition, these limits were modified because of new calculations and updated emission factors.

- (d) Condition D.3.2 from FESOP F097-10170-00063, issued on August 17, 1999: Pursuant to 326 IAC 2-8-4(1), Particulate Matter Less than 10 Microns in Aerodynamic Diameter (PM10) emissions from the sand handling, casting cleaning, and shakeout operations are limited as follows:
- (1) The PM10 emissions from the sand handling, casting cleaning, and shakeout operations shall not exceed 5.14 pounds per hour. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
 - (2) The amount of metal melted per twelve consecutive month period shall be limited to 20,000 tons. This throughput limit is equivalent to:
 - (A) Ten and three tenths (10.3) tons of PM10 from the sand handling, casting cleaning, and shakeout emissions exhausted out stack A.
 - (B) Five tenths (0.5) tons of PM10 from building fugitive emissions associated with the sand handling, casting cleaning, and shakeout operations.

Compliance with this Condition and Condition C.1 of this permit shall make the Part 70 Operating Permit regulation 326 IAC 2-7 not applicable.

Revised Condition:

Pursuant to 326 IAC 2-8-4 (FESOP), and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following emission limits:

- (1) The combined PM10 emissions from the shakeout, casting cleaning (including shot blast), and sand handling operations exhausting through stack A shall not exceed 0.30 lbs/hr. For the purposes of demonstrating compliance with this condition the filterable and condensable fractions of PM10 shall be counted.
- (2) The Manganese emissions from shot blast operations exhausting through stack A shall not exceed 6.26E-03 lbs Manganese/ton Metal.

Combined with the PM10 and Manganese emissions from other emission units, the PM10 emissions from the entire source are limited to less than 100 tons per year, the Manganese emissions from the entire source are limited to less than 10 tons per year, and total HAPs emissions from the entire source are less than 25 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.2.2, D.4.2, and D.5.1 makes the Part 70 Operating Permit requirements (326 IAC 2-7), 326 IAC 2-2 (PSD), 326 IAC 2-1.1-5 (Nonattainment NSR), 326 IAC 2-4.1(MACT), and 40 CFR 63, Subpart EEEEE not applicable.

Reason Modified:

In order to facilitate compliance determination and to make the existing limits practically enforceable, emission limits were revised to reflect lb per ton limits instead of ton per year. In addition, these limits were modified because of new calculations and updated emission factors.

- (e) Condition D.4.2 from FESOP F097-10170-00063, issued on August 17, 1999: The amount of metal melted per twelve consecutive month period shall not exceed 20,000 tons. This throughput limit is equivalent two (2.0) tons of PM10 emissions from core making operations per twelve consecutive month period. Compliance with this

condition and condition C.1 of this permit shall make the Part 70 Operating Permit regulation 326 IAC 2-7 not applicable.

Revised Condition:

Pursuant to 326 IAC 2-8-4 (FESOP), the Permittee shall comply with the following sand usage and emission limits for the core making operations:

- (1) The amount of sand at the air set core making process per twelve consecutive month period shall be limited to less than 4,100 tons with compliance determined at the end of each month.
- (2) The amount of sand at the oil sand core making process per twelve consecutive month period shall be limited to less than 730 tons with compliance determined at the end of each month.
- (3) The amount of shell sand at the Redford shell core making processes per twelve consecutive month period shall be limited to less than 120 tons with compliance determined at the end of each month.
- (4) The PM10 emissions from the air set core making process, oil sand core making process, and the Redford shell core making processes shall each not exceed 0.81 lbs PM10/ton sand.

Combined with the PM10 emissions from other emission units, the PM10 emissions from the entire source are each limited to less than 100 tons per year. Therefore, compliance with this Condition and Conditions D.1.2, D.2.2, and D.3.2 makes the Part 70 Operating Permit requirements (326 IAC 2-7) not applicable.

Reason modified:

This limit was based on metal usage. The core making process is dependent on core production, sand, or resin usage and is independent of the amount of metal used at the foundry; therefore this limit has been revised to reflect core sand usage.

All conditions from previous approvals were incorporated into this FESOP except the following:

- (a) 097-10170-00063 issued on August 17, 1999

Condition D.4.3 Permit Revision: Any modification or change which results in an increase in the PTE for VOC emissions greater than 25 tons per year, need prior approval.

Reason not incorporated: this condition is no longer necessary since condition B.17 of FESOP renewal 097-18317-00063 states any permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.

- (b) 097-10170-00063 issued on August 17, 1999

Condition C.16 Emission Statement.

Reason not incorporated: this condition is no longer necessary since the emission statement rule (326 IAC 2-6) has been revised. The new rule was effective March 27, 2004. See State Applicability section of this TSD.

- (c) Condition D.1.2 from FESOP F097-10170-00063, issued on August 17, 1999: Pursuant to 326 IAC 6-1-2(a), the PM emissions from the two general furnaces are ventilation stacks identified as stacks V11 and V12 shall not exceed 0.03 grains per dry standard cubic foot of exhaust gas. For the purposes of demonstrating compliance with 326 IAC 6-1-2(a) only the filterable fraction of PM shall be counted.

Reason not incorporated:

326 IAC 6-1-2 has been repealed; the particulate emission limitations are now codified in 326 IAC 6.5-1-2. Pursuant to 326 IAC 6.5-1-2(e)(2), any melting process, excluding any cupola, of a gray iron foundry shall be limited to particulate matter emissions of no greater than 0.07 grain/dscf. The two general furnace ventilation stacks identified as stacks V11 and V12 are associated with the melting process; therefore, 326 IAC 6.5-1-2(e)(2) should apply instead of 326 IAC 6-1-2(a) (now codified 326 IAC 6.5-1-2(a)).

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the FESOP Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete FESOP renewal application for the purposes of this review was received on November 5, 2003.

There was no notice of completeness letter mailed to the source.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 14).

Unrestricted Potential Emissions

This table reflects the unrestricted potential emissions of the source, excluding the emission limits that were contained in the previous FESOP.

Pollutant	Unrestricted Potential Emissions (tons/yr)
PM	Greater than 250
PM10	Greater than 250
SO ₂	Less than 100
VOC	Less than 100
CO	Greater than 100
NO _x	Less than 100

Note: For the purpose of determining Title V applicability for particulates, PM10, not PM, is the regulated pollutant in consideration.

HAPs	Unrestricted Potential Emissions (tons/yr)
Chromium	Less than 10
Manganese	Greater than 10
Cobalt	Less than 10
Nickel	Less than 10
Arsenic	Less than 10
Cadmium	Less than 10
Selenium	Less than 10
Lead	Less than 10
Formaldehyde	Less than 10
Benzene	Less than 10
Phenol	Less than 10
Toluene	Less than 10
TOTAL	Less than 25

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM10 and CO is greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is equal to or greater than ten (10) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7. The source will be issued a FESOP because the source will limit its emissions below the Title V levels.
- (c) Fugitive Emissions
 Since this type of operation is one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

Potential to Emit After Issuance

The source has opted to remain a FESOP. The table below summarizes the potential to emit, reflecting all limits, of the emission units. Any control equipment is considered enforceable only after issuance of this Federally Enforceable State Operating Permit and only to the extent that the effect of the control equipment is made practically enforceable in the permit. The source's potential to emit after issuance is based on the emission limits included in the original FESOP F097-10170-00063 issued on August 17, 1999 and revised in this FESOP Renewal.

Process/facility	Potential to Emit After Issuance (tons/year)						HAPs
	PM	PM10	SO ₂	VOC	CO	NO _x	
Furnaces (EU-01) - Stack B	6.7 ⁽¹⁾	6.4 ⁽¹⁾	0	0	0	0	2.38 tons of Mn ⁽⁴⁾ 7.77 tons total HAP
Furnaces (EU-01) - Not Captured	0.1	0.1	0	0	0	0	
Charge Handling (EU-02)	6.0 ⁽¹⁾	5.4 ⁽¹⁾	0	0	0	0	
Preheater (EU-03)	0.83	1.24	0.07	0.60	9.20	10.9	
Inoculation (EU-04)	18.0 ⁽¹⁾	27 ⁽¹⁾	0	0	0	0	
Shakeout, Casting Cleaning, Sand Handling (EU-06A, EU-06B, EU-06C)							
Stack A - Emissions	5.22 ⁽²⁾	1.31 ⁽²⁾	0	26.0	0	0	0
Emissions Not Captured	5.27	0.88	0	0.26	0 ⁽³⁾	0	
Pouring/Cooling (EU-05)	42.0 ⁽¹⁾	30.9 ⁽¹⁾	0.44	3.07	60	0.22	
Core Oil Core Making (EU-08)	1.31 ⁽⁵⁾	0.29 ⁽⁵⁾	0	16.3	0	0	
Redford Shell Core Machines (EU-09A, EU-09B)	0.22 ⁽⁵⁾	0.05 ⁽⁵⁾	0	0.04	0	0	
Air Set Core Making (EU-07)	8.10 ⁽⁵⁾	1.82 ⁽⁵⁾	0	13.6	0	0	< 10 tons of a single HAP <25 tons of a Combination of HAPs
Insignificant							
Wood Working	0.6	0.6	0	0	0	0	
Paved Roads	0.1	0.01					
NG Combustion	0.23	0.23	0.02	0.17	2.59	3.08	
Total Emissions	94.7	76.2	0.53	60.0	71.8	14.2	

- (1) PTE based on 20,000 tons of metal melted per 12 month period, (20,000 tons of metal melted is equivalent to 4,000 hours of operation at 5 tons per hour).
- (2) PTE based on 99% capture efficiency, FIRE 6.25 emission factors and 20,000 tons of metal melted per 12 month period.
- (3) The CO emissions were accounted for in the pouring and cooling calculations.
- (4) PTE for Manganese was based 20,000 tons of metal melted per 12 month period and emissions factors obtained from the Speciate V3.2 Database.
- (5) PTE based on sand usage limits per 12 month period.

County Attainment Status

The source is located in Marion County.

Pollutant	Status
PM2.5	Basic Nonattainment
PM10	Attainment
SO ₂	Maintenance
NO ₂	Attainment
8-hour Ozone	Basic Nonattainment
CO	Maintenance
Lead	Maintenance

Note: Effective October 25, 2006, 326 IAC 1-4-1 has been revised to remove the one hour ozone standard in Indiana.

- (a) Marion County has been classified as nonattainment for PM2.5 in 70 FR 943 dated January 5, 2005. Until U.S. EPA adopts specific New Source Review rules for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions pursuant to the Non-attainment New Source Review requirements. See the State Rule Applicability for the source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for emission offset (326 IAC 2-3).
- (c) Marion County has been classified as attainment or unclassifiable in Indiana for PM10, SO₂, NO₂, CO, and Lead. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2003 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	Not reported
PM10	12
SO ₂	0
VOC	8
CO	0
NO _x	0
HAP	Not reported

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

This source has the potential to emit before controls greater than ten (10) tons per year of Manganese, a single hazardous air pollutant (HAP). However, the source has accepted federally enforceable limits on the amount of metal used such that the amount of any single HAP emitted is limited to less than ten (10) tons per year. The source is taking the

HAP limit prior to the compliance date of 40 CFR 63, Subpart EEEEE (April 23, 2007). Therefore, 40 CFR 63, Subpart EEEEE is not included in this permit.

Note: The potential to emit HAP other than Manganese (before control) is 9.85 tons per year. Therefore, a limit on total combined HAPs is unnecessary.

- (c) Pursuant to 40 CFR 64.2 no emission units at this source are subject to Compliance Assurance Monitoring (CAM). The requirements of this part only apply to pollutant-specific emissions units at a major source that is required to obtain a Part 70 permit. Interstate Castings has chosen to limit emissions and obtain a FESOP rather than a Part 70 permit.

State Rule Applicability - Entire Source

326 IAC 1-5-2 Emergency Reduction Plans

The source has submitted an Emergency Reduction Plan (ERP) on September 7, 1988. The ERP has been verified to fulfill the requirements of 326 IAC 1-5-2 (Emergency Reduction Plans).

326 IAC 1-6-3 Preventive Maintenance Plan

The source is required to have Preventive Maintenance Plans (PMP) for the Melt Furnace operation and associated control devices and the cleaning/shakeout/sand handling operations and associated control devices. The compliance inspector has reviewed these plans submitted on July 7, 2003 and has determined that they are satisfactory.

326 IAC 2-2 Prevention of Significant Deterioration (PSD) Regulation

This source operates under the Standard Industrial Classification (SIC) Code 3321 and therefore, belongs to the secondary metal production plant source category in 326 IAC 2-2-1(gg)(1). The uncontrolled potential to emit PM and PM10 for this source exceeds the 100 tons per year major source threshold. This source was initially constructed prior to the promulgation of the PSD rules, but was modified in 1981, 1982, 1998, and 2002.

The table blast and cutoff saw were installed in 1981 as part of the casting cleaning operations. The potential increase in PM/PM10 emissions for constructing these operations was calculated to be below the PSD major modification thresholds of 25 tpy PM and 15 tpy PM10; therefore, this modification was not subject to PSD requirements.

The air set core making process was constructed in 1982. The potential emissions of PM from the modification were less than 100 tons per year for the source. In addition, the potential emissions of VOC from the modification were less than 40 tons per year and the potential emissions of PM10 from this modification were less than 15 tons per year. It is unclear whether the air set core making process was limited by a past permit to stay below the significant threshold level for PM (25 tpy). However, the source submitted data showing that their actual PM emissions are below 25 tons per year. The source's calculations use the two highest years since 1982 in terms of sand usage and show that PM emissions could have never exceeded 4.22 tons per year. PM emission limits have been established in this FESOP Renewal (see paragraph (e) below). Therefore, the air set core making process did not trigger PSD requirements.

The 1998 modification to the sand handling process made the process automatic instead of manual. The automatic process still produces the same number of molds as the manual and emissions were not affected by this modification.

During the preparation of the original FESOP in 1999, the source agreed to limit VOC, PM and PM10 emission to less than 100 tons per year, thereby, making the source a minor source under 326 IAC 2-2.

The modification on the sand handling process in 2002 was not subject to the requirements of 326 IAC 2-2. The potential emissions from the B & P mold machine modification are negligible for all pollutants and from the two Redford core shell machines are 0.56 tons of PM per year, 0.088 of PM10 tons per year, and 0.33 tons of VOC per year.

PM emissions are limited as follows and render the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable. The PM₁₀, CO, and VOC emission limitations are discussed below in the section titled 326 IAC 2-8 (FESOP).

- (a) The amount of metal melted at the two (2) electric induction furnaces shall be limited to less than 20,000 tons per twelve consecutive month period with compliance determined at the end of each month.

The PM emissions shall be limited to the following:

- (1) The PM emissions from the two induction furnaces exhausting through stack B shall not exceed 0.67 lbs PM per ton of metal.
 - (2) The PM emission from the charge handling and inoculation processes, exhausting through stacks V11 and V12, shall not exceed 2.40 lbs PM per ton of metal.
 - (3) The PM emissions from the pouring and cooling operations, exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 4.20 lbs PM/ton Metal.
 - (4) The PM emissions from the shakeout, casting cleaning (including shot blast), and sand handling operations, exhausting through stack A, shall not exceed 1.19 lbs/hr.
- (b) The amount of sand used in the air set core making process shall be limited to less than 4,500 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (c) The amount of sand used in the oil sand core making process shall be limited to less than 730 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (d) The amount of shell sand used in the Redford shell core making processes shall be limited to less than 120 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
- (e) The PM emissions from the air set, core oil, and Redford shell core making operations shall each be limited to 3.6 lbs PM/ton sand.

Compliance with these limitations renders the requirements of 326 IAC 2-2, Prevention of Significant Deterioration not applicable.

326 IAC 2-1.1-5 (Nonattainment New Source Review)

Marion County has been designated as nonattainment for PM_{2.5} in 70 FR 943 dated January 5, 2005. According to the April 5, 2005 EPA memo title "Implementation of New Source Review Requirements in PM_{2.5} Nonattainment Areas" authored by Steve Page, Director of OAQPS, until EPA promulgates the PM_{2.5} major NSR regulations, states should assume that a major stationary source's PM₁₀ emissions represent PM_{2.5} emissions. IDEM will use the PM₁₀ nonattainment major NSR program as a surrogate to address the requirements of nonattainment major NSR for the PM_{2.5} NAAQS. A major source in a nonattainment area is a source that emits or has the potential to emit one hundred (100) tons per year of any regulated pollutant.

Since no modifications have been completed since the effective date of the 8-hour ozone standard and Interstate Castings, Inc. has a limited potential to emit of PM₁₀ below one hundred (100) tons per year, 326 IAC 2-1.1-5 does not apply.

326 IAC 2-3 (Emission Offset)

On April 15, 2004, the United States Environmental Protection Agency (U.S. EPA) named 23 Indiana counties, and one partial county, nonattainment for the new 8-hour ozone standard. The designations became effective on June 15, 2004. Marion County has been designated as nonattainment for the 8-hour ozone standard.

Since no modifications have been completed since the effective date of the 8-hour ozone standard and Interstate Castings, Inc. has a potential to emit of VOC below one hundred (100) tons per year, 326 IAC 2-3 does not apply.

326 IAC 2-4.1 New Source Toxics Control

This source did not undergo a construction or a reconstruction of a major HAP source after July 27, 1997. Therefore, this source is not subject to 326 IAC 2-4.1. The source has agreed to accept throughput limiting restrictions to avoid the requirements of the Part 70 Operating Permit Program. See *State Rule Applicability - Entire Source* 326 IAC 2-8-4 (Federally Enforceable State Operating Permit) of this TSD for a detailed discussion of the throughput limiting restrictions.

326 IAC 2-6 Emission Reporting

This source is located in Marion County, is not required to operate under a Part 70 permit, and emits less than 5 tons per year of lead. Therefore, pursuant to 326 IAC 2-6-1(b), the source is only subject to additional information requests as provided in 326 IAC 2-6-5.

326 IAC 2-8-4 Federally Enforceable State Operating Permit

The source has a potential to emit PM₁₀, CO, and Manganese that is above the Title V applicability threshold. It is necessary to add a total HAP limit to the permit because the potential to emit HAP other than Manganese (before control) is 9.85 tons per year. Actual emissions of PM₁₀, CO, and Manganese are less than the Title V applicability threshold; therefore, the source qualifies as a FESOP source. The source has agreed to accept usage limits to avoid the requirements of the Part 70 Operating Permit Program.

- (a) The amount of metal melted at the induction furnaces per twelve consecutive month period shall be limited to less than 20,000 tons with compliance determined at the end of each month. The PM₁₀ emissions shall be limited to the following:
- (1) The PM₁₀ emissions from the two induction furnaces exhausting through stack B shall not exceed 0.64 lbs PM₁₀ per ton of metal.
 - (2) The PM₁₀ emission from the charge handling and inoculation processes exhausting through stacks V11 and V12 shall not exceed 3.24 lbs PM₁₀ per ton of metal. This limit is based on emission factors from FIRE 6.25 and includes a 1.5 multiplier used as a safety factor requested by the source.
 - (3) The Manganese emissions from the two (2) electric induction furnaces (Stack B) shall not exceed 0.0207 lbs Manganese/ton metal.
 - (4) The Manganese emissions from the charge handling and inoculation processes exhausting through stacks V11 and V12 shall not exceed 7.44E-02 lbs Manganese/ton metal.
 - (5) The PM₁₀ emissions from the pouring and cooling operations exhausting through stacks V17, V18, V26, V27, and V28 shall not exceed 3.09 lbs PM₁₀/ton Metal. This limit is based on emission factors from FIRE 6.25 and includes a 1.5 multiplier used as a safety factor requested by the source.
 - (6) The combined CO emissions from the pouring and cooling operations exhausting through stacks V17, V18, V26, V27, and V28 and the shakeout operations exhausting through stack A as described in Section D.3 shall not exceed 6.0 lbs CO/ton Metal.

- (7) The Manganese emissions from the pouring and cooling operations exhausting through stacks V17, V18, V25, V26, and V27 shall not exceed 0.13 lbs Manganese/ton metal.
 - (8) The PM10 emissions from the shakeout, casting cleaning (including shot blast), and sand handling operations exhausting through stack A shall not exceed 0.30 lbs/hr. This limit is based on emission factors from FIRE 6.25 and includes a 1.5 multiplier used as a safety factor requested by the source.
 - (9) The Manganese emissions from shotblast operations exhausting through stack A shall not exceed 6.26E-03 lbs Manganese/ton Metal.
- (b) The sand usage limits affect the emissions from the core making operations because these operations are dependent on shell sand usage and/or core production. The amount of sand used in each core making process shall be limited as follows:
- (1) The amount of sand at the air set core making process shall be limited to less than 4,500 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (2) The amount of sand at the oil sand core making process shall be limited to less than 730 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (3) The amount of shell sand at the Redford shell core making processes shall be limited to less than 120 tons per twelve (12) consecutive month period with compliance determined at the end of each month.
 - (4) The PM10 emissions from the air set core making process, oil sand core making process, and the Redford shell core making processes shall each not exceed 0.81 lbs PM10/ton sand. This limit is based on emission factors from FIRE 6.25 and includes a 1.5 multiplier used as a safety factor requested by the source.

For the purposes of demonstrating compliance with these conditions the filterable and condensable fractions of PM10 shall be counted. The metal usage limits, sand usage limits, and PM10 and CO emission limits limit the PM10 and CO emissions from the entire source to less than 100 tons per year and makes the Part 70 Operating Permit requirements (326 IAC 2-7) not applicable. Compliance with these limits is also equivalent to 2.38 tons of Manganese emissions for the entire source; therefore, the emissions from the entire source are limited to less than 10 tons per year for a single HAP. Compliance with these limitations renders 326 IAC 2-2 (PSD), 326 IAC 2-4.1 (MACT), 326 IAC 2-1.1-5 (Nonattainment New Source Review), and 40 CFR 63, Subpart EEEEE not applicable. The potential to emit combined HAP emissions from the entire source is less than 25 tons per year.

326 IAC 5-1 (Opacity)

Pursuant to 326 IAC 5-1-2 (Opacity), except as provided in 326 IAC 5-1-3 (Temporary Alternative opacity limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, the source shall not generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.

326 IAC 6-5 (Fugitive Particulate Emissions Limitations)

The source is located in the portion of Marion County included in Center and Wayne Townships, and the potential fugitive particulate emissions, as defined in 326 IAC 6-5-2, from the source are greater than 25 tons/yr. Therefore, the requirements of 326 IAC 6-5 are applicable. Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on December 5, 2006. The plan is included as Attachment A of the permit.

State Rule Applicability - Individual Facilities

326 IAC 6.5-1-1 (Particulate Emission Limitation)

Since this source has the potential to emit PM greater than 100 tons per year and is located in Marion County the PM emission limitations established under 326 IAC 6.5-1-1 apply as follows:

- (a) Pursuant to 326 IAC 6.5-1-2(e)(2), the PM emissions from the melt operations which are captured and vented out stack B are limited to 0.07 grains per dry standard cubic foot of exhaust gas or 5.1 pounds per hour. The two (2) electric furnaces were stack tested for PM emissions on April 19, 1995. The results of this stack test showed an average emissions rate of 0.017 gr/dscf and was well below the applicable PM limit of 0.07 grains/dscf. In addition, the calculations show these operations would be in compliance without the use of the service tank and cyclone.
- (b) Pursuant to 326 IAC 6.5-1-2(a), the PM emissions from the sand handling, casting cleaning and shakeout are each limited to 0.03 grains per dry standard cubic foot of exhaust gas or 5.14 pounds per hour. The PM collection system for the shakeout system has been reconfigured since the last stack test in April of 1995; therefore, there is no valid stack test date for this emission unit. Based on AP-42 emission factors and the rated control efficiency of the baghouse the combined emissions from sand handling, casting cleaning, and shakeout, should be able to comply with the 0.03 gr/dscf limit.
- (c) Pursuant to 326 IAC 6.5-1-2(a), the PM emissions from the casting pouring and cooling operations and core making operations are limited to 0.03 grains per dry standard cubic foot of exhaust gas.
- (d) Pursuant to 326 IAC 6.5-1-2(a), the PM emissions from the insignificant wood working, welding and brazing operations are limited to 0.03 grains per dry standard cubic foot of exhaust gas. The calculations show the woodworking operations must use the dust collector in order to comply with this limit.
- (e) Pursuant to 326 IAC 6.5-1-2(b)(3), the PM emissions from the old conference room boiler shall not exceed 0.01 grains per dry standard cubic foot of exhaust gas.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processors)

326 IAC 6-3-2 does not apply to the welding and brazing operations because the welding and brazing operations are subject to a more stringent limit in 326 IAC 6.5-1.

326 IAC 8-1-6 (General New Source Emissions Reduction Requirement)

All facilities listed as part of this source were constructed prior to January 1, 1980 and/or have potential VOC emissions less than twenty-five (25) tons per year. Therefore, none of the facilities located at this source are subject to the requirements of 326 IAC 8-1-6.

326 IAC 8-6 (Organic Solvents)

This rule does not apply since this source does not have potential VOC emissions greater than 100 tons per year.

326 IAC 9-1-2 (Carbon Monoxide Emission Limits)

This rule does not apply since the induction furnaces do not have the capacity to melt 10 tons or more of metal per hour.

326 IAC 11-1-1 (Existing Foundries)

The requirements of 11-1-2 do not apply since, 326 IAC 6.5-1 also applies and the requirements of 326 IAC 11-1-2 are not consistent with the requirements established in 326 IAC 6.5-1.

Testing Requirements

- (a) **The Melt Operations:**
In order to demonstrate compliance with 326 IAC 2-2 (PSD) and the FESOP limits pursuant to 326 IAC 2-8-4, within one hundred and eighty (180) days after the issuance of this permit, the Permittee shall perform PM/PM10 and Manganese testing on the melting operations (Stacks B, V11, and B12) using methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C- Performance Testing.
- (b) **The Pouring and Cooling Operations:**
In order to demonstrate compliance with 326 IAC 2-2 (PSD) and the FESOP limits pursuant to 326 IAC 2-8-4, within one hundred and eighty (180) days after the issuance of this permit, the Permittee shall perform PM and PM10, CO, and Manganese testing on the Pouring and Cooling operations (Stacks V17, V18, V26, V27, and V28) using methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C- Performance Testing.
- (c) **The Shakeout/Casting Cleaning and Sand Handling Operations:**
In order to demonstrate compliance with 326 IAC 2-2 (PSD) and the FESOP limits pursuant to 326 IAC 2-8-4, within one hundred and eighty (180) days after the issuance of this permit, the Permittee shall perform PM/PM10 and Manganese testing on exhaust stack A using methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C- Performance Testing.
- (d) **The Core Making Operations:**
In order to demonstrate compliance with 326 IAC 2-2 (PSD) and the FESOP limits pursuant to 326 IAC 2-8-4, within one hundred and eighty (180) days after the issuance of this permit, the Permittee shall perform PM and PM10 testing on the core making operations (Stacks V4, V5, and V38) using methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this source are as follows:

1. The Melt Operations, identified as EU-01, EU-02, EU-03, and EU-04, have applicable compliance monitoring conditions as specified below:

Visible emission notations of stack B, V11 and V12 shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

These monitoring conditions are necessary to ensure continuous compliance with the PM emissions limitations established in 326 IAC 6.5-1-2 (Particulate Emission Limitations), the PM10 emissions limitations established under 326 IAC 2-8 (FESOP), and the PM emissions limitations established to render 326 IAC 2-2 (PSD) not applicable.

2. The Pouring and Cooling operations, identified as EU-05, have applicable compliance monitoring conditions as specified below:

Visible emission of stacks V17, V18, V26, V27, and V28 shall be performed notations once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

These monitoring conditions are necessary to ensure continuous compliance with the PM emissions limitations established in 326 IAC 6.5-1-2 (Particulate Emission Limitations), the PM10 emissions limitations established under 326 IAC 2-8 (FESOP), and the PM emissions limitations established to render 326 IAC 2-2 (PSD) not applicable.

3. The Shakeout/Casting Cleaning and Sand Handling operations, identified as EU-06A, EU-06B, and EU-06C, have applicable compliance monitoring conditions as specified below:
- (a) Visible emission notations of stack A shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.
 - (b) The Permittee shall record the pressure drop across the baghouse, identified as CE-A, used in conjunction with the Casting Cleaning, Sand Handling and Shakeout processes, at least once per day when the process is in operation when venting to the atmosphere. When for any one reading, the pressure drop across the baghouse is outside the normal range of 1.5 and 7.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Response to Excursions or Exceedances. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C – Response to Excursions and Exceedances.

The instrument used for determining the pressure shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and OES, and shall be calibrated at least once every six (6) months.

- (c) For a single compartment baghouse, controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

These monitoring conditions are necessary to ensure continuous compliance with the PM emissions limitations established in 326 IAC 6.5-1-2, the PM10 and Manganese emissions limitations established under 326 IAC 2-8-4, and the PM emissions limitations established to render 326 IAC 2-2 not applicable.

4. The Core Making Operations, identified as EU-07, EU-08, EU-09A, and EU-09B, have applicable compliance monitoring conditions as specified below:

Visible emission notations of stacks V4, V5, and V38 shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Response to Excursions or Exceedances. Failure to take response steps in accordance with Section C - Response to Excursions or Exceedances shall be considered a deviation from this permit.

These monitoring conditions are necessary to ensure continuous compliance with the PM emissions limitations established in 326 IAC 6.5-1-2 (Particulate Emission Limitations), the PM10 emissions limitations established under 326 IAC 2-8 (FESOP), and the PM emissions limitations established to render 326 IAC 2-2 (PSD) not applicable.

Conclusion

The operation of this Gray and Ductile Iron Foundry shall be subject to the conditions of the attached proposed FESOP No.: F097-18317-00063.

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Furnaces**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: May 11, 2006

Emission Unit: EU-01
Unit Description: Two Electric Induction Furnaces (only one can operate at a time)
Furnace Capacity: 5 tons of metal charged per hour
Control Device: Settling Tank/Cyclone
Capture Efficiency: 99.00%
Control Efficiency: 25.00%
Stack ID: B
Stack Flow Rate (acfm) 8500

Potential Emissions (before control) - Two Electric Induction Furnaces

Pollutants	PM	PM10	VOC	CO	SOx	NOx	Pb
Em. Factor	0.9	0.86	0	0	0	0	0.1
SCC	30400303	30400303	30400303	30400303	30400303	30400303	30400303
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	19.71	18.83	0.00	0.00	0.00	0.00	2.19
Pollutants	Cr	Mn	Co	Ni	As	Cd	Se
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00006	0.00001
Em. Factor	0.00034	0.02790	0.00003	0.00060	0.00012	0.00005	0.00001
Source of Em. Factor*	Speciate v3.2						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	7.49E-03	6.11E-01	5.91E-04	1.32E-02	2.56E-03	1.18E-03	1.97E-04

* The emission factors for metals were calculated using the wt% value from Speciate v3.2 and multiplying this percentage by the emission factor for PM (which was taken from FIRE 6.25).

Allowable Emissions - Two Electric Induction Furnaces

Pollutant	Rule Cite	gr/dscf	lbs/hr	tons/yr
PM	326 IAC 6.5-1-2(e)	0.07	5.1	22.338

Limited PTE (after control and production limit) - Two Electric Induction Furnaces

Production Limit	20000	tons of metal/12 months					
Pollutant	PM*	PM10*	VOC	CO	SOx	NOx	Pb
Emissions Not Captured (tpy)	0.09	0.086	0.00	0.00	0.00	0.00	0.01
Stack B Emissions (tpy)	6.6825	6.3855	0.00	0.00	0.00	0.00	0.74
Total	6.7725	6.4715	0	0	0	0	0.7525
Pollutants	Cr	Mn	Co	Ni	As	Cd	Se
Emissions Not Captured (tpy)	3.42E-05	2.79E-03	2.70E-06	6.03E-05	1.17E-05	5.40E-06	9.00E-07
Stack B Emissions (tpy)	2.54E-03	2.07E-01	2.00E-04	4.48E-03	8.69E-04	4.01E-04	6.68E-05
Total	2.57E-03	2.10E-01	2.03E-04	4.54E-03	8.80E-04	4.06E-04	6.77E-05

Methodology

Potential Emissions (before control) was calculated using the following equation:
Emissions (tons/yr) =
(Emission Factor, lbs/ton x Furnace Capacity, tons metal/hr x 8760 hr/yr) / 2000 lbs/ton

Limited PTE was calculated using the following equation(s):
Emissions Not Captured (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton x (1- Collection Efficiency)

Stack B Emissions (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton x Collection Eff. x (1-Control Eff.)

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Charge Handling**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Emission Unit: EU-02
Unit Description: Charge Handling
Furnace Capacity: 5 tons of metal charged per hour
Stack ID: V11 and V12
Control Efficiency: No Control

Potential Emissions

Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	0.6	0.36	0	0	0	0		
SCC	30400315	30400315	30400315	30400315	30400315	30400315		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	13.14	7.88	0.00	0.00	0.00	0.00		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00023	0.01860	0.00002	0.00040	0.00008	0.00001	0.00004	0.00231
Source of Em. Factor*	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	4.99E-03	4.07E-01	3.94E-04	8.80E-03	1.71E-03	1.31E-04	7.88E-04	5.06E-02

* The emission factors for metals were calculated using the wt% value from Speciate v3.2 and multiplying this percentage by the emission factor for PM (which was taken from FIRE 6.25).

Limited PTE (after control and production limit) - Charge Handling

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10*	VOC	CO	SOx	NOx		
Charge Handling Emissions (tpy)	6	5.4	0	0	0	0		
Pollutant	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Charge Handling Emissions (tpy)	0.0023	0.1860	0.0002	0.0040	0.0008	0.0001	0.0004	0.0231

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions was calculated using the following equation:
Emissions (tons/yr) =
(Emission Factor, lbs/ton x Furnace Capacity, tons metal/hr x 8760 hr/yr) / 2000 lbs/ton

Limited PTE was calculated using the following equation:
Charge Handling Emissions (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Preheater**

Company Name: Interstate Castings, Inc.
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: February 19, 2007

Emission Unit: EU-03
 Unit Description: Preheater
 Fuel: Natural Gas
 Maximum firing rate: 0.025 mmcf/hr
 Stack ID: V11 and V12

Potential Emissions - Preheater

Pollutants	PM	PM10*	VOC	CO	SOx	NOx	Pb
Em. Factor	7.6	7.6	5.5	84	0.6	100	0.0005
SCC	10200602	10200602	10200602	10200602	10200602	10200602	10200602
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/mmcf						
Emissions (tons/yr)	0.83	1.25	0.60	9.20	0.07	10.95	0.00

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.
 Note: HAP emissions for the preheater can be found on page 10 of this Appendix A.

Methodology

Potential Emissions was calculated using the following equation:

$$\text{Emissions (tons/yr)} = (\text{Emission Factor, lbs/mmcf}) * (\text{Maximum firing rate, mmcf/hr}) * (8760 \text{ hr/yr}) / (2000 \text{ lbs/ton})$$

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Inoculation**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Emission Unit: EU-04
Unit Description: Ductile Iron Production - Inoculation
Charge Capacity: 5 tons of metal charged per hour
Stack ID: V11 and V12
Control Efficiency: No Control

Potential Emissions - Ductile Iron Production/Inoculation

Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	1.8	1.8	0	0	0	0		
SCC	30400321	30400321	30400321	30400321	30400321	30400321		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	39.42	39.42	0.00	0.00	0.00	0.00		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00068	0.05580	0.00005	0.00121	0.00023	0.00002	0.00011	0.00693
Source of Em. Factor	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	1.50E-02	1.22E+00	1.18E-03	2.64E-02	5.12E-03	3.94E-04	2.37E-03	1.52E-01

Limited PTE (after control and production limit) - Ductile Iron Production/Inoculation

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10	VOC	CO	SOx	NOx		
Ductile Iron Production/Inoculation Emissions (tpy)	18	27	0	0	0	0		
Pollutant	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Ductile Iron Production/Inoculation Emissions (tpy)	0.00684	0.558	0.00054	0.01206	0.00234	0.00018	0.00108	0.0693

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Limited PTE was calculated using the following equation:

Ductile Iron Production/Inoculation Emissions (tpy) =
(Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Pouring/Casting/Cooling**

Company Name: Interstate Castings, Inc.
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: February 19, 2007

Emission Unit: EU-05
 Unit Description: Pouring/Casting/Cooling
 Charge Capacity: 5 tons of metal charged per hour
 Stack ID: Emissions vented through stacks V17, V18, V26, V27, and V28
 Control Efficiency: No Control

Potential Emissions* - Pouring/Casting/Cooling Operations

Pollutants	PM	PM10	VOC	CO	SOx	NOx		
Em. Factor	4.2	2.06	0.14	6.0	0.02	0.01		
SCC	30400320	30400320	30400320	30400320	30400320	30400320		
Source of Em. Factor	FIRE 6.25							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	91.98	45.11	3.07	131.40	0.44	0.22		
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006	0.00385
Em. Factor	0.00160	0.13020	0.00013	0.00281	0.00055	0.00004	0.00025	0.01617
Source of Em. Factor	Speciate v3.2							
Units of Em. Factor	lbs/ton metal							
Emissions (tons/yr)	3.50E-02	2.85E+00	2.76E-03	6.16E-02	1.20E-02	9.20E-04	5.52E-03	3.54E-01

* Organic HAP emissions are accounted for on page 10 of the calculations.

Limited PTE (No control but has production limit) - Pouring/Casting/Cooling Operations

Production Limit	20000	tons of metal/12 months						
Pollutant	PM	PM10*	VOC	CO	SOx	NOx		
Pouring/Casting Emissions (tpy)	42	30.9	1.4	60	0.2	0.1		
Pollutant	Cr	Mn	Co	Ni	As	Se	Cd	Pb
Pouring/Casting Emissions (tpy)	0.01596	1.30200	0.00126	0.02814	0.00546	0.00042	0.00252	0.16170

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions (before control) was calculated using the following equation:
 Emissions (tons/yr) =
 (Emission Factor, lbs/ton x Charge Capacity, tons metal/hr x 8760 hr/yr) / 2000 lbs/ton

Limited PTE was calculated using the following equation:
 Pouring/Casting Emissions (tpy) =
 (Emission Factor, lbs/ton x 20,000 tons of Metal per twelve month period) / 2000 lbs/ton

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Shakeout, Grinding/Cleaning, Sand Handling, and Shot Blast Operations**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Emission Unit:	EU-06A	EU-06B	EU-06C	
Unit Description:	Casting Shakeout	Table Blast, Shot Blast, 3 Grinders and Cutoff Saw	Sand Handling	
Charge Capacity (tph):	5	5	NA	tons of metal charged per hour
Sand Handling Cap. (tph):	NA	NA	20.63	tons of sand handled per hour
Stack ID:	A	A	A	
Stack Flow Rate (acfm)	20000	20000	20000	
Control Device	Cyclone Baghouse	Baghouse	Baghouse	
Collection Efficiency	0.99	0.99	0.99	
Control Efficiency	0.99	0.99	0.99	

Potential Emissions - (includes shakeout, grinding/cleaning, sand handling, and shot blast operations)

Shakeout							
Pollutants	PM	PM10	VOC	CO	SOx	NOx	
Em. Factor	3.2	2.24	1.2	*	0	0	
SCC	30400331	30400331	30400331	30400331	30400331	30400331	
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	70.08	49.06	26.28	0.00	0.00	0.00	
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006 0.00385
Em. Factor	0.00122	0.09920	0.00010	0.00214	0.00042	0.00003	0.00019 0.01232
Source of Em. Factor	Speciate v3.2 Speciate v3.2						
Units of Em. Factor	lbs/ton metal lbs/ton metal						
Emissions (tons/yr)	2.66E-02	2.17E+00	2.10E-03	4.70E-02	9.11E-03	7.01E-04	4.20E-03 2.70E-01

Grinding/Cleaning							
Pollutant	PM**	PM10	VOC	CO	SOx	NOx	
Em. Factor	0.0045	0.0045	0	0	0	0	
SCC	30400360	30400360	30400360	30400360	30400360	30400360	
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	0.10	0.10	0.00	0.00	0.00	0.00	

Sand Handling							
Pollutant	PM**	PM10	VOC	CO	SOx	NOx	
Em. Factor	3.6	0.54	0	0	0	0	
SCC	30400350	30400350	30400350	30400350	30400350	30400350	
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/ton sand						
Emissions (tons/yr)	325.29	48.79	0.00	0.00	0.00	0.00	

Shot Blast							
Pollutant	PM	PM10	VOC	CO	SOx	NOx	
Em. Factor	17	1.7	0	0	0	0	
SCC	30400340	30400340	30400340	30400340	30400340	30400340	
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/ton metal						
Emissions (tons/yr)	372.30	37.23	0.00	0.00	0.00	0.00	
Pollutants	Cr	Mn	Co	Ni	As	Se	Cd Pb
Speciate wt% (v3.2)	0.00038	0.03100	0.00003	0.00067	0.00013	0.00001	0.00006 0.00385
Em. Factor	0.00646	0.52700	0.00051	0.01139	0.00221	0.00017	0.00102 0.06545
Source of Em. Factor	Speciate v3.2 Speciate v3.2						
Units of Em. Factor	lbs/ton metal lbs/ton metal						
Emissions (tons/yr)	1.41E-01	1.15E+01	1.12E-02	2.49E-01	4.84E-02	3.72E-03	2.23E-02 1.43E+00

* The CO emissions from shakeout are accounted for in the pouring and cooling calculations found on page 5.
** Assume PM equals PM10.

Allowable Emissions

Pollutant	Rule Cite	gr/dscf	lbs/hr	tons/yr
PM	326 IAC 6.5-1-2(a)	0.03	5.14	22.53

Limited PTE - (includes shakeout, grinding/cleaning, sand handling, and shot blast operations)

Production Limit	20000	tons of metal/12 months					
Pollutant	PM	PM10*	VOC	CO	SOx	NOx	
Stack A Emissions (tpy)	5.22	1.31	11.88	0.00	0.00	0.00	
	Cr	Mn	Co	Ni	As	Se	Cd Pb
	7.60E-04	6.20E-02	6.00E-05	1.34E-03	2.60E-04	2.00E-05	1.20E-04 7.70E-03
Pollutant	PM	PM10*	VOC	CO	SOx	NOx	
Emissions Not Captured (tpy)	5.27	0.88	0.12	0.00	0.00	0.00	
	Cr	Mn	Co	Ni	As	Se	Cd Pb
	7.68E-04	6.26E-02	6.06E-05	1.35E-03	2.63E-04	2.02E-05	1.21E-04 7.78E-03
Total Emissions (tpy)	PM	PM10	VOC	CO	SOx	NOx	
	10.49	2.19	12.00	0.00	0.00	0.00	
	Cr	Mn	Co	Ni	As	Se	Cd Pb
	1.53E-03	1.25E-01	1.21E-04	2.69E-03	5.23E-04	4.02E-05	2.41E-04 1.55E-02

* About 0.59 tpy of these emissions are limited by the 20000 ton metal input; the other 0.72 tpy comes from the sand handling operations that is calculated based on maximum sand handling capacity; all is exhausted through Stack A. The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions was calculated using the following equation:

$$\text{Emissions (tons/yr)} = (\text{Emission Factor, lbs/ton} \times \text{Charge (or Sand) Capacity, tons/hr} \times 8760 \text{ hr/yr}) / 2000 \text{ lbs/ton}$$

Limited PTE was calculated using the following equation(s):

$$\text{Stack A Emissions (tpy)} = [(\text{Emission Factors (shakeout + grinding/cleaning + shot blast), lbs/ton metal} \times 20,000 \text{ tons of Metal per twelve month period}) / 2000 \text{ lbs/ton}] + [(\text{Emission Factor (sand handling), lbs/ton sand} \times 20.63 \text{ tons sand/hr} \times 8760 \text{ hr/yr} / 2000 \text{ lbs/ton})] \times \text{Collection Eff.} \times (1 - \text{Control Eff.})$$

$$\text{Emissions Not Captured (tpy)} = [(\text{Emission Factors (shakeout + grinding/cleaning + shot blast), lbs/ton metal} \times 20,000 \text{ tons of Metal per twelve month period}) / 2000 \text{ lbs/ton}] + [(\text{Emission Factor (sand handling), lbs/ton sand} \times 20.63 \text{ tons sand/hr} \times 8760 \text{ hr/yr})] \times (1 - \text{Collection Eff.})$$

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Core Making (VOC and HAP Calcs)**

Company Name: Interstate Castings, Inc.
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: February 19, 2007

Emission Unit IDs: EU-07, EU-08, EU-09A, and EU-09B
 Unit Descriptions: One (1) Air Set Core Making, One (1) Core Oil Core Making, and Two (2) Redford Shell Core Making Machines
 Stack ID: V4, V5, and V38

Air Set Core Making (EU-07)

Maximum Capacity 12,000 pounds of sand per hour
 Limit Capacity 4,500 tons of sand per year

Material Formulation	Quantity at Max. Capacity (lb/hr)	Quantity at Limit Capacity (lb/hr)
100 lb sand	12,000	1027.40
1.25 lb resin	150	12.84
0.25 lb catalyst	30	2.57

Core Oil Core Making (EU-08)

Maximum Capacity 250 pounds of sand per hour
 Limit Capacity 730 tons of sand per year

Material Formulation	Quantity at Max. Capacity (lb/hr)	Quantity at Limit Capacity (lb/hr)
200 lb sand	250	166.67
5.94 lb core oil	7.43	4.95
12.51 lb city water	15.64	10.43
1.31 lb iron oxide	1.64	1.09
7.56 lb cereal binder	9.45	6.30

#1 Redford Shell Core Machine (EU-09A)

Maximum Capacity 35.75 pounds of shell sand per hour
 Limit Capacity 60 tons of shell sand per year

#2 Redford Shell Core Machine (EU-09B)

Maximum Capacity 35.75 pounds of shell sand per hour
 Limit Capacity 60 tons of shell sand per year

Core Making Formulations*	VOC (% wt)	Furfuryl Alcohol	Benzene (% wt)	Phenol (% wt)	Toluene (% wt)	Formaldehyde (% wt)	Methanol (% wt)
Air Set Core Making							
Resin	78.36	77	0.00	0	0	0.36	1.00
Catalyst	0.10	0.00	0.10	0	0	0	
Core Oil Core Making							
Core Oil	50	0	0	0	0	0	0

*Catalyst wt % furfuryl alcohol was provided by manufacturer; all other formulations are from MSDS's. IDEM, OAQ has approved data showing furfuryl alcohol is a reactive component, and reacts quickly to yield a non-volatile, solid product. The reaction takes place at ambient temperature. Emissions are so small it is difficult to measure any emissions; this is complicated by the fact that the resin system both contains water, and produces some water as a reaction byproduct.

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Core Making (VOC and HAP Calcs Continued)**

Company Name: Interstate Castings
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Potential VOC and HAP Emissions - Core Making

	Specific HAPs (tpy)						Total HAP (tpy)
	Total VOC (tpy)	Benzene	Phenol	Toluene	Formaldehyde	Methanol	
Air Set Core Making*							
Resin	13.45	0.00	0.00	0.00	0.05	3.29	3.33
Catalyst	0.13	0.13	0.00	0.00	0.00	0.00	0.13
Core Oil Core Making							
Core Oil	16.26	0.00	0.00	0.00	0.00	0.00	0.00
Redford Shell Core Machine (#1)							
Pollutants	VOC	Benzene	Phenol	Toluene			
Em. Factor	0.25	0.046	0.127	0.018			
Source of Em. Factor	**	**	**	**			
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand			
Emissions (tons/yr)	0.02	3.60E-03	9.94E-03	1.41E-03			
Redford Shell Core Machine (#2)							
Pollutants	VOC	Benzene	Phenol	Toluene			
Em. Factor	0.25	0.046	0.127	0.018			
Source of Em. Factor	**	**	**	**			
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand			
Emissions (tons/yr)	0.02	3.60E-03	9.94E-03	1.41E-03			

Summary of PTE

	TOTAL VOC (tpy)	TOTAL HAP (tpy)
Air Set	13.58	3.46
Core Oil	16.26	0.00
Redford Shell	0.04	0.03

* Air Set Core Making calculations should include the following evaporation factors:
2% by weight for furfuryl alcohol (from the Manufacturer, this is a conservative estimate)
2% by weight for formaldehyde (from Form R Reporting of Binder Chemicals Used in Foundries)
50% by weight for methanol (from Form R Reporting of Binder Chemicals Used in Foundries)

** These emission factors came from the minor permit revision F097-15876-00063, issued on April 2, 2004 for the construction of these two redford shell core machines.

Limited Potential VOC and HAP Emissions - Core Making

	Specific HAPs (tpy)						Total HAP (tpy)
	Total VOC (tpy)	Benzene	Phenol	Toluene	Formaldehyde	Methanol	
Air Set Core Making*							
Resin	1.15	0.00	0.00	0.00	4.05E-03	0.28	0.29
Catalyst	0.01	0.01	0.00	0.00	0.00	0.00	0.01
Core Oil Core Making							
Core Oil	10.84	0.00	0.00	0.00	0.00	0.00	0.00
Redford Shell Core Machine (#1)							
Pollutants	VOC	Benzene	Phenol	Toluene			
Em. Factor	0.25	0.046	0.127	0.018			
Source of Em. Factor	**	**	**	**			
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand			
Emissions (tons/yr)	0.01	1.38E-03	3.81E-03	5.40E-04			
Redford Shell Core Machine (#2)							
Pollutants	VOC	Benzene	Phenol	Toluene			
Em. Factor	0.25	0.046	0.127	0.018			
Source of Em. Factor	**	**	**	**			
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand			
Emissions (tons/yr)	0.01	1.38E-03	3.81E-03	5.40E-04			

Summary of Limited PTE

	TOTAL VOC (tpy)	TOTAL HAP (tpy)
Air Set	1.16	0.30
Core Oil	10.84	0.00
Redford Shell	0.02	0.01

* Air Set Core Making calculations should include the following evaporation factors:
2% by weight for furfuryl alcohol (from the Manufacturer, this is a conservative estimate)
2% by weight for formaldehyde (from Form R Reporting of Binder Chemicals Used in Foundries)
50% by weight for methanol (from Form R Reporting of Binder Chemicals Used in Foundries)

** These emission factors came from the minor permit revision F097-15876-00063, issued on April 2, 2004 for the construction of these two redford shell core machines.

Methodology

Potential VOC and HAP Emissions were calculated using the following equations:

Air Set Core Making VOC Emissions = (Quantity at Max. Capacity, lb/hr) x [(wt % each VOC in Resin) x (each specific % evaporation factor)] x 8760 hr/yr x 1 ton/2000 lb
Core Oil Core Making VOC Emissions = (Quantity at Max. Capacity, lb/hr) x 8760 hr/yr x (wt% VOC in Core Oil) x 1 ton/2000 lb
Redford Shell Machines VOC Emissions = Emission Factor, lbs/sand x Max. lb sand usage/hr x 8760 hr/yr x 1 ton/2000 lb

Limited Potential VOC and HAP Emissions were calculated using the following equations:

Air Set Core Making VOC Emissions = (Quantity at Limit Capacity, lb/hr) x [(wt % each VOC in Resin) x (each specific % evaporation factor)] x 8760 hr/yr x 1 ton/2000 lb
Core Oil Core Making VOC Emissions = (Quantity at Limit Capacity, lb/hr) x 8760 hr/yr x (wt% VOC in Core Oil) x 1 ton/2000 lb
Redford Shell Machines VOC Emissions = Emission Factor, lbs/sand x Limit lb sand usage/hr x 8760 hr/yr x 1 ton/2000 lb

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Core Making (PM, PM10, SOx, and NOx Calculations)**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Emission Unit: EU-07, EU-08, EU-09A, and EU-09B
Unit Description: One (1) Air Set Core Making, and Two (2) Redford Shell Core Making Machines
Stack ID: V4, V5, and V38

Air Set Core Making (EU-07)

Maximum Capacity 12,000 pounds of sand per hour
Limit Capacity 4,500 tons of sand per year

Core Oil Core Making (EU-08)

Maximum Capacity 250 pounds of sand per hour
Limit Capacity 730 tons of sand per year

#1 Redford Shell Core Machine (EU-09A)

Maximum Capacity 35.75 pounds of shell sand per hour
Limit Capacity 60 tons of shell sand per year

#2 Redford Shell Core Machine (EU-09B)

Maximum Capacity 35.75 pounds of shell sand per hour
Limit Capacity 60 tons of shell sand per year

PTE Other Criteria Pollutant Emissions - Core Making (continued from previous page)

Air Set Core Making

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	94.61	14.19	0.00	0.00

Core Oil Core Making

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	1.97	0.30	0.00	0.00

Redford Shell Core Machine (#1)

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.28	0.04	0.00	0.00

Redford Shell Core Machine (#2)

Pollutants	PM	PM10	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.28	0.04	0.00	0.00

Summary of PTE - All Core Making Machines

Pollutant	PM	PM10	SOx	NOx
All Core Making Machines	97.14	14.57	0.00	0.00

Limited PTE (Sand Usage Limits) - All Core Making Machines

Air Set Core Making

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	8.10	1.82	0.00	0.00

Core Oil Core Making

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	N/A	N/A
Source of Em. Factor	FIRE 6.25	FIRE 6.25	N/A	N/A
Units of Em. Factor	lbs/ton sand	lbs/ton sand	N/A	N/A
Emissions (tons/yr)	1.31	0.30	0.00	0.00

Redford Shell Core Machine (#1)

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.11	0.02	0.00	0.00

Redford Shell Core Machine (#2)

Pollutants	PM	PM10*	SOx	NOx
Em. Factor	3.6	0.54	0	0
SCC	30400350	30400350	30400350	30400350
Source of Em. Factor	FIRE 6.25	FIRE 6.25	FIRE 6.25	FIRE 6.25
Units of Em. Factor	lbs/ton sand	lbs/ton sand	lbs/ton sand	lbs/ton sand
Emissions (tons/yr)	0.11	0.02	0.00	0.00

Summary of Limited PTE - All Core Making Machines

Pollutant	PM	PM10	SOx	NOx
All Core Making Machines	9.63	2.17	0.00	0.00

*The limited PM10 Emission Rate (tpy) includes a 1.5 safety factor requested by the source.

Methodology

Potential Emissions were calculated using the following equations:

Emissions (tons/yr) = (Maximum Capacity, lb sand/hr) x 1 ton/2000 lb x (Emission Factor, lbs/ton sand) x 8760 hr/yr x 1 ton/2000 lb

Limited Potential Emissions were calculated using the following equations:

Emissions (tons/yr) = (Limit Capacity, ton sand/hr) x (Emission Factor, lbs/ton sand) x 8760 hr/yr x 1 ton/2000 lb

Appendix A - Emissions Calculations for Interstate Castings Inc.

HAP Calculations for Pouring, Cooling, Shakeout, and NG Combustion

Company Name: Interstate Castings, Inc.
 Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
 FESOP Permit: 097-18317-00063
 Reviewer: ERG/JR
 Date: February 19, 2007

Potential HAP Emissions from pouring, cooling, shakeout, and NG combustion

Misc. Combustion HAPs	Maximum Capacity	Units	Combustion HAP Emission Factor (lb HAP/lb input)	PTE (ton/yr)	Total Misc. Combustion HAP (ton/yr)
Process:					
Pouring/Cooling & Shakeout ^a	55.9	(tons resin/yr)	0.01121 lbs Benzene/lb	0.63	1.13
Pouring/Cooling & Shakeout ^a	55.9	(tons resin/yr)	0.000975 lbs Phenol/lb	0.05	
Pouring/Cooling & Shakeout ^a	55.9	(tons resin/yr)	0.003989 lbs other HAPs/lb	0.22	
Natural Gas Combustion ^{b,c}	26.8	MMBtu/hr	1.89 lbs/MMCF	0.222	

^a PTE for Miscellaneous Combustion HAPs for Pouring/Cooling and Shakeout are based on total input of organic materials to the air set core making process. Assume that the resin in the cores (12.75 lb/hr) are combusted/volatilized during pouring/cooling/shakeout. Emission factor for Pouring/Cooling & Shakeout is from Modern Casting: "Calculating Emission Factors for Pouring, Cooling and Shakeout" Table 1: Phenolic Nobake Binder, October 1994. HAPs include benzene, phenol, toluene, aldehydes, and others in trace amounts.

^b Emission factor for Natural Gas Combustion is from FIRE 6.25.

^c Natural Gas Combustion:

air set core oven	0.115 MMBtu/hr
oil sand core oven	1.6 MMBtu/hr
old conference room boiler	0.106 MMBtu/hr
preheater	25 MMBtu/hr
TOTAL	26.821 MMBtu/hr

Methodology

PTE Misc. Combustion HAPs (tons/yr) = Maximum Capacity (ton/yr) x 2000 lbs/ton x Emission Factor (lb HAP/lb input) x 1 ton/2000 lb

PTE Misc. Combustion HAPs (Natural Gas Combustion) (tons/yr) = Maximum Capacity (MMBtu/hr) x MMCF/1000 MMBtu x Emission Factor (lb HAP/MMCF x 8760 (hrs/yr) x 1 ton/2,000 lbs

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Insignificant Fugitive Emissions from Road Surfaces

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E = emission factor (lb/vehicle mile traveled)
sL = road surface silt loading (g/m²) = 0.6 (g/m²) (AP-42, Table 13.2.1-3)
w = mean vehicle weight (tons) = 25.7 tons
k = empirical constant = 0.082 for PM and 0.016 for PM10
a = empirical constant = 0.65
b = empirical constant = 1.5
C = emission factor for exhaust, brake and tire wear 0.00047 for PM and PM10
p = number of days per year with 0.01 inches precipitation 120

PM Emission Factor = $(0.082 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460) = 0.86$ lbs/mile

PM10 Emission Factor = $(0.016 \times (0.6/2)^{0.65} \times (29/3)^{1.5} - 0.00047) \times (1 - 120/1460) = 0.17$ lbs/mile

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	*Ave Weight of Vehicles (tons)	*Trip Number (trips/yr)	* Round Trip Distance (mile/trip)	Vehicle Mile Traveled (VMT) (miles/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	PTE of PM before Control (tons/yr)	PTE of PM10 before Control (tons/yr)
12k pound vehicle	6.0	235	0.10	24	22.86%	1.37	1.01E-02	1.97E-03
34k pound vehicle	17.0	107	0.10	11	10.41%	1.77	4.61E-03	8.97E-04
30k pound vehicle	15.0	98	0.10	10	9.53%	1.43	4.22E-03	8.21E-04
34k pound vehicle	17.0	147	0.20	29	28.60%	4.86	1.27E-02	2.46E-03
40k pound vehicle	20.0	147	0.20	29	28.60%	5.72	1.27E-02	2.46E-03
Total				103	100%	15.2	4.42E-02	8.62E-03

* This information is provided by the source.

Methodology

Vehicle Mile Traveled (miles/yr) = Trip Number (trips/yr) x Round-Trip Distance (mile/trip)
Traffic Component (%) = VMT / Total VMT
Component Vehicle Weight = Ave. Weight of Vehicles (ton) x Traffic Component (%)
PTE of PM/PM10 before Control (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors x 1 ton/2000 lbs

**Appendix A - Emissions Calculations for Interstate Castings Inc.
Insignificant Natural Gas Combustion Devices**

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Insignificant Natural Gas Combustion Devices

Process	MMBtu/hr	Process	MMBtu/hr
Core Oven	1.6	Air-set conveyor Infra-red	0.024
Maintenance West Space Heater	0.225	Core Room Core Prep Infra-red	0.024
Maintenance East Space Heater	0.225	Bench Core Table Infra-red	0.024
Chipping Booth Space Heater	0.2	Bench Core Table Infra-red	0.024
Old Dock Space Heater	0.4	Core Assembly Table Infra-red	0.024
Maintenance Shower Room Furnace	0.125	Air-set Core & Mold assembly Table Infrared	0.024
Old Conference Room Boiler	0.106	Air-set Core & Mold assembly Table Infrared	0.024
Airset Oven	0.115	Air-set Mold Assembly Infrared	0.024
Airset Torpedo	0.4	Air-set Mold Assembly Infrared	0.024
Airset Torpedo	0.4	Sinto Infra-red (basement)	0.024
Bull Ladle Torch -2"	0.279	Sinto Infra-red (basement)	0.024
Control Room Furnace	0.125	#9 Molding Machine Infra-red (overhead)	0.024
Core Dip Drying Table Infra-red	0.048	#9 Molding Machine Infra-red (basement)	0.024
Ladle Torch 2" Floor Molding	0.279	Molding Line Setup Table Infra-red (basement)	0.024
Ladle Torch 2" Floor Molding	0.279	#8 Molding Machine Infra-red (basement)	0.024
Ladle Torch 2" Floor Molding	0.279	#8 Molding Machine Infra-red (overhead)	0.024
Bull Ladle Torch -2"	0.279	#7 Molding Machine Infra-red (basement)	0.024
Heavey Chip Torpedo	0.4	#7 Molding Machine Infra-red (overhead)	0.024
Shipping Office North Infra-red	0.014	#6 Molding Machine Infra-red (basement)	0.024
Shipping Office South Infra-red	0.014	#6 Molding Machine Infra-red (overhead)	0.024
Core Assembly Table Heater	0.014	#5 Molding Machine Infra-red (basement)	0.024
Muller Trash Chute Torch	0.005	#5 Molding Machine Infra-red (overhead)	0.024
Muller Gearbox Infra-red	0.024	#4 Molding Machine Infra-red (basement)	0.024
Muller Manifold Infra-red	0.024	#4 Molding Machine Infra-red (overhead)	0.024
Compressor Water Manifold Infra-red	0.024	#3 Molding Machine Infra-red (basement)	0.024
Air-set room space heater	0.15	#3 Molding Machine Infra-red (overhead)	0.024
Air-set room Infra-red	0.024	#1 Molding Machine Infra-red (basement)	0.024
Air-set room Infra-red	0.024	#1 Molding Machine Infra-red (overhead)	0.024
Air-set conveyor Infra-red	0.024	Ladle Prep Area Sink Infra-red	0.024
Air-set conveyor Infra-red	0.024	#2 Stand Grinder Infra-red	0.024
Floor Molding North Station Infra-red	0.024	#1 Stand Grinder Infra-red	0.024
Floor Molding South Station Infra-red	0.024	Brinell Tester Infrared	0.024
Floor Molding Water Barell Infra-red	0.024	Single Pedestal Dual Wheel Grinder Infra-red	0.024
Floor Molding Simpson Muller Infra-red	0.024	Floor Molding Rollaround Triple Unit Infra-red	0.024

Total Heat Input Capacity 7.041 MMBtu/hr
Total Max Firing Rate 0.006902941 MMCF/hr

Pollutants	PM	PM10	VOC	CO	SOx	NOx	Pb
Em. Factor	7.6	7.6	5.5	84	0.6	100	0.0005
SCC	10200603	10200603	10200603	10200603	10200603	10200603	10200603
Source of Em. Factor	FIRE 6.25						
Units of Em. Factor	lbs/mmcf						
Emissions (tons/yr)	0.23	0.23	0.17	2.54	0.02	3.02	0.00

Potential HAPs

Potential Throughput
MMCF/yr

60.5

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMCF	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential Emission in tons/yr	6.35E-05	3.63E-05	2.27E-03	5.44E-02	1.03E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMCF	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential Emission in tons/yr	1.51E-05	3.33E-05	4.23E-05	1.15E-05	6.35E-05

Emission Factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (AP-42 Supplement D 3/98)

The five highest organic and metal HAPs emission factors are provided above.
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

All Emission factors are based on normal firing.

Potential Throughput (MMCF/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
Potential Emission in tons/yr = Potential Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
Limited Potential Emission in tons/yr = Limited Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Company Name: Interstate Castings, Inc.
Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218
FESOP Permit: 097-18317-00063
Reviewer: ERG/JR
Date: February 19, 2007

Insignificant Emissions From Wood Working

Description: (1) ban saw and (1) oscillating vertical sander
Control Device: Dust Collector
Air Flowrate: 550 acfm

PTE of PM/PM10 before Control (tons/yr)

Pollutant	PM	PM-10
Tons/yr	61.9	61.9

PTE of PM/PM10 after Control (tons/yr)

Pollutant	PM	PM-10
Factor	0.03	0.03
Units	gr/dscf	gr/dscf
Tons/yr	0.62	0.62

Controlled PM emissions were assumed to be equivalent to 0.03 gr/dscf
PM emissions were assumed to be equivalent to PM-10
Baghouse efficiency assumed to be 99%.

Methodology

$$\text{PTE of PM/PM10 after Control (tons/yr)} = \text{Grain Loading (gr/dscf)} \times \text{Max. Air Flow Rate (scfm)} \times 60 \text{ mins/hr} \times 1/7000 \text{ lb/gr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs}$$

$$\text{PTE of PM/PM10 before Control (tons/yr)} = \text{PTE of PM/PM10 after Control (tons/yr)} / (1 - \text{Control Efficiency})$$

Appendix A - Emissions Calculations Summary for Interstate Castings, Inc.

Address: 3823 Massachusetts Avenue, Indianapolis, Indiana 46218

FESOP Permit: 097-18317-00063

Reviewer: ERG/JR

Date: February 19, 2007

Summary of Potential Emissions (TPY)

Processes	PM	PM10	VOC	CO	SOx	NOx	Pb
Furnaces (EU-01)	19.7	18.8	0.00	0.00	0.00	0.00	2.19
Charging (EU-02)	13.1	7.9	0.00	0.00	0.00	0.00	0.05
Preheater (EU-03)	0.83	1.25	0.60	9.20	0.07	11.0	0.00
Inoculation (EU-04)	39.4	39.4	0.00	0.00	0.00	0.00	0.15
Pouring/Casting/Cooling (EU-05)	92.0	45.1	3.07	131.4	0.44	0.22	0.35
Shakeout (EU-06A)	70.1	49.1	26.3	0.00	0.00	0.00	0.27
Grinding/Cleaning (EU-06B)	0.10	0.10	0.00	0.00	0.00	0.00	0.00
Sand Handling (EU-06C)	325.3	48.8	0.00	0.00	0.00	0.00	0.00
Shot Blast (EU-06B)	372.3	37.2	0.00	0.00	0.00	0.00	1.43
Core Making - Air Set (EU-07)	94.6	14.2	13.6	0.00	0.00	0.00	0.00
Core Making - Core Oil (EU-08)	1.97	0.30	16.3	0.00	0.00	0.00	0.00
Core Making - Redford Shell Sand (EU-09A and EU-09B)	0.56	0.08	0.04	0.00	0.00	0.00	0.00
Insignificant - Paved Roads	0.04	0.01	0.00	0.00	0.00	0.00	0.00
Insignificant - Natural Gas Combustion	0.23	0.23	0.17	2.54	0.02	3.02	0.00
Insignificant - Wood Working	61.9	61.9	0.00	0.00	0.00	0.00	0.00
Total Potential Emissions	1092.2	324.4	60.0	143.1	0.52	14.2	4.45

Processes	Mn	Cr	Co	Ni	As	Se	Cd
Furnaces (EU-01)	0.61	7.49E-03	5.91E-04	1.32E-02	2.56E-03	1.97E-04	1.18E-03
Charging (EU-02)	0.41	4.99E-03	3.94E-04	8.80E-03	1.71E-03	1.31E-04	7.88E-04
Preheater (EU-03)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Inoculation (EU-04)	1.22	1.50E-02	1.18E-03	2.64E-02	5.12E-03	3.94E-04	2.37E-03
Pouring/Casting/Cooling (EU-05)	2.85	3.50E-02	2.76E-03	6.16E-02	1.20E-02	9.20E-04	5.52E-03
Shakeout (EU-06A)	2.17	2.66E-02	2.10E-03	4.70E-02	9.11E-03	7.01E-04	4.20E-03
Grinding/Cleaning (EU-06B)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Sand Handling (EU-06C)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Shot Blast (EU-06B)	11.5	1.41E-01	1.12E-02	2.49E-01	4.84E-02	3.72E-03	2.23E-02
Core Making (EU-07, EU-08, EU-09A, and EU-09B)	0.00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Insignificant - Natural Gas Combustion	1.15E-05	3.33E-05	0.00E+00	6.35E-05	0.00E+00	0.00E+00	3.33E-05
Total Potential Emissions	18.8	0.23	0.02	0.41	0.08	0.01	0.04
Total Metal HAP			24.03				

Processes	Benzene	Phenol	Toluene	Formaldehyde	Methanol	other**
Core Making - Air Set (EU-07)	0.13	0	0	0.05	3.29	0
Core Making - Core Oil (EU-08)	0	0	0	0	0	0
Core Making - Redford Shell Sand (EU-09A and EU-09B)	7.20E-03	1.99E-02	2.82E-03	0	0	0
Pouring/Casting/Cooling (EU-05)	0.63	0.05	0	0	0	0.22
Insignificant - Natural Gas Combustion	6.35E-05	0.00E+00	1.03E-04	2.27E-03	0.00E+00	0.05
Total PTE	0.76	0.07	0.00	0.05	3.29	0.28
Total Organic HAP			4.45			
TOTAL HAP			28.49			

Summary of Limited Potential to Emit (TPY)

Processes	PM	PM10	VOC*	CO	SOx	NOx	Pb*
Furnaces (EU-01) - Stack B Emissions	6.68	6.39	0.00	0.00	0.00	0.00	2.17
Furnaces (EU-01) - Emissions Not Captured	0.09	0.09	0.00	0.00	0.00	0.00	0.02
Charging (EU-02)	6.00	5.40	0.00	0.00	0.00	0.00	0.05
Preheater (EU-03)	0.83	1.25	0.60	9.20	0.07	11.0	0.00
Inoculation (EU-04)	18.0	27.0	0.00	0.00	0.00	0.00	0.15
Pouring/Casting/Cooling (EU-05)	42.0	30.9	3.07	60.0	0.44	0.22	0.35
Shakeout/Cleaning/Sand Handling/Shot Blast (EU-06A, EU-06B, EU-06B)							
Stack A Emissions	5.22	1.31	26.0	0.00	0.00	0.00	1.68
Shakeout/ Cleaning/ Sand Handling/ Shot Blast (EU-06A, EU-06B, EU-06B)							
Emissions Not Captured	5.27	0.88	0.26	0.00	0.00	0.00	0.02
Core Making - Air Set (EU-07)	8.10	1.82	13.6	0.00	0.00	0.00	0.00
Core Making - Core Oil (EU-08)	1.31	0.30	16.3	0.00	0.00	0.00	0.00
Core Making - Redford Shell Sand (EU-09A and EU-09B)	0.22	0.05	0.04	0.00	0.00	0.00	0.00
Insignificant - Paved Roads	4.42E-02	8.62E-03	0.00	0.00	0.00	0.00	0.00
Insignificant - Natural Gas Combustion	0.23	0.23	0.17	2.54	0.02	3.02	0.00
Insignificant - Wood Working	0.62	0.62	0.00	0.00	0.00	0.00	0.00
Total Limited PTE	94.6	76.2	60.0	71.7	0.52	14.2	4.45

Processes	Mn	Cr*	Co*	Ni*	As*	Se*	Cd*
Furnaces (EU-01) - Stack B Emissions	2.07E-01	7.41E-03	5.85E-04	1.31E-02	2.54E-03	1.95E-04	1.17E-03
Furnaces (EU-01) - Emissions Not Captured	2.79E-03	7.49E-05	5.91E-06	1.32E-04	2.56E-05	1.97E-06	1.18E-05
Charging (EU-02)	1.86E-01	4.99E-03	3.94E-04	8.80E-03	1.71E-03	1.31E-04	7.88E-04
Preheater (EU-03)	0.00E+00						
Inoculation (EU-04)	5.58E-01	1.50E-02	1.18E-03	2.64E-02	5.12E-03	3.94E-04	2.37E-03
Pouring/Casting/Cooling (EU-05)	1.30E+00	3.50E-02	2.76E-03	6.16E-02	1.20E-02	9.20E-04	5.52E-03
Shakeout/Cleaning/Sand Handling/Shot Blast (EU-06A, EU-06B, EU-06B)							
Stack A Emissions	6.20E-02	1.66E-01	1.32E-02	2.93E-01	5.69E-02	4.38E-03	2.62E-02
Shakeout/ Cleaning/ Sand Handling/ Shot Blast (EU-06A, EU-06B, EU-06B)							
Emissions Not Captured	6.26E-02	1.68E-03	1.33E-04	2.96E-03	5.75E-05	4.42E-05	2.65E-04
Core Making (EU-07, EU-08, EU-09A, and EU-09B)	0.00E+00						
Insignificant - Natural Gas Combustion	1.15E-05	3.33E-05	0.00E+00	6.35E-05	0.00E+00	0.00E+00	3.33E-05
Total Limited PTE	2.38	0.23	0.02	0.41	0.08	0.01	0.04
Total Metal HAP			7.60				

Processes	Benzene*	Phenol*	Toluene*	Formaldehyde*	Methanol*	other**
Core Making - Air Set (EU-07)	1.31E-01	0	0	4.73E-02	3.29	0
Core Making - Core Oil (EU-08)	0	0	0	0	0	0
Core Making - Redford Shell Sand (EU-09A and EU-09B)	7.20E-03	1.99E-02	2.82E-03	0	0	0
Pouring/Casting/Cooling (EU-05)	0.63	0.05	0	0	0	0.22
Insignificant - Natural Gas Combustion	6.35E-05	0	1.03E-04	2.27E-03	0	0.05
Total Limited PTE	0.76	0.07	2.92E-03	4.96E-02	3.29	0.28
Total Organic HAP			4.45			
TOTAL HAP			12.06			

* The permit does not explicitly limit emissions from these pollutants; therefore, the limited PTE for these pollutants is based on full PTE. However, the metal and sand usage limits for purposes of limiting PM, PM10, CO, and Mn will likely reduce emissions from these other noted pollutants (see individual process pages in this Appendix for further detailed calculations).

** Other organics which may include Toluene