



Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
(800) 451-6027  
www.IN.gov/idem

TO: Interested Parties / Applicant  
DATE: January 5, 2006  
RE: Kingsbury Castings Division / 091-15282-00078  
FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### 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 eighteen (18) calendar days of the mailing 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 Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER.dot 1/10/05



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# NEW SOURCE CONSTRUCTION AND FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) OFFICE OF AIR QUALITY

**Kingsbury Castings Division  
3<sup>rd</sup> Road Annex  
Kingsbury, Indiana 46345**

(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.**

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.: F 091-15282-00078	
Issued by: Original Signed By: Paul Dubenetzky, Assistant Commissioner Office of Air Quality	Issuance Date: January 5, 2006  Expiration Date: January 5, 2011

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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). 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)]

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The Permittee owns and operates a stationary ductile iron foundry source.

Authorized individual:	President
Source Address:	3 <sup>rd</sup> Road Annex, Kingsbury, Indiana 46345
Mailing Address:	P.O. Box 639, LaPorte, Indiana 46350
General Source Phone:	(219)362-8531
SIC Code:	3321
Source Location Status:	LaPorte
Source Status:	Nonattainment for ozone under the 8-hour standard Attainment for all other criteria pollutants Federally Enforceable State Operating Permit (FESOP) Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act 1 of 28 Source Categories

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

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

- (a) One (1) scrap and charge handling process, constructed in 1970, not exhausting through a stack, capacity: 4.95 tons of metal per hour.
- (b) One (1) natural gas-fired scrap charge preheater, identified as HEAT2, constructed in 1976, exhausting through stack 2, heat input capacity: 2.2 million British thermal units per hour.
- (c) Two (2) electric induction furnaces, identified as FRN03 and FRN04, constructed in 2000, equipped with an optional fabric filter (K4) and exhausting through stack K4 and general building exhausts A and B, maximum charge rate: 4.95 tons of metal per hour, total.
- (d) Four (4) natural gas-fired ladle heaters, exhausting through the general building ventilation, heat input capacity: 2.7 million British thermal units per hour, total.
- (e) Magnesium treatment operations, operating since 1974, exhausting through general building exhausts A and B, capacity: 4.95 tons of metal per hour.
- (f) Pouring, casting and cooling operations, with a total capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, consisting of the following:
  - (1) One (1) pouring and cooling line, identified as Power & Free, constructed in 1990 and modified in 2004, exhausting through stacks 1 through 5 and 32.
  - (2) One (1) casting and cooling area, identified as TURN3, constructed in 1980, exhausting through stack 24.

- (g) One (1) shakeout and degating operation, constructed in 1980 and modified in 1994, capacity: 4.95 tons of metal and 4.95 tons of sand per hour.
- (h) One (1) shotblast machine, identified as WHE02, constructed in 1983, controlled by an integral dust collector (K1) and exhausting inside the building, capacity: 4.95 tons of castings per hour.
- (i) One (1) cutoff saw, identified as SAW03, constructed in 1970, equipped with an optional fabric filter (K3) and exhausting inside the building, capacity: 4.95 tons of metal per hour.
- (j) One (1) sand handling operation, constructed in 1970, including nine (9) sand silos, belt conveyors, pneumatic conveyors and fork lifts, controlled by one (1) dust collector (K2) and eight (8) bin vent filters (K5, K6, K7, K8, K9, K10, K11 and K12) exhausting inside the source, capacity: 4.95 tons of sand per hour.
- (k) Nineteen (19) shell molding machines, identified as MOL01 through MOL019, two (2) constructed in 1970, two (2) constructed in 1974, one (1) constructed in 1975, one (1) constructed in 1978, one (1) constructed in 1980, two (2) constructed in 1983, two (2) constructed in 1986, two (2) constructed in 1992, two (2) constructed in 1993 and four (4) constructed in 1995, each equipped with a natural gas-fired heater, exhausting through stacks 13, 14, 17, 15, 16, 26, 28, and 31, using a release agent with no VOC, capacity: 700 pounds of pre-coated sand per hour, each, 33.25 pounds of binder per hour, each, and 1.0 million British thermal unit per hour, each.
- (l) Eight (8) shell core machines, identified as COR01 through COR08, two (2) constructed in 1974, one (1) constructed in 1979, one (1) constructed in 1980, two (2) constructed in 1983, and two (2) constructed in 1999, each equipped with a natural gas-fired heater, exhausting through stacks 18 and 31, using a release agent with no VOC, capacity: 225 pounds of pre-coated sand per hour, each, 10.69 pounds of binder per hour, each, and 1.75 million British thermal units per hour, total.
- (m) Truck loading and unloading, maximum throughput: 4.95 tons of sand per hour.
- (n) One (1) shell molding machine, identified as MOL020, equipped with a natural gas-fired heater, exhausting to stacks 28 and 31, using a release agent with no VOC, capacity: 700 pounds of pre-coated sand per hour, 33.25 pounds of binder per hour and 1.0 million British thermal unit per hour.
- (o) Four (4) shell core machines, identified as COR09 through COR12, each equipped with a natural gas-fired heater, exhausting through stacks 18 and 31, capacity: 300 pounds of sand per hour, 14.25 pounds of binder per hour, and 0.21875 million British thermal units per hour, each.

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) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, including thirty-six (36) space heaters with a total capacity of 15.851 million British thermal units per hour.
- (b) Combustion source flame safety purging on startup.

- (c) 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 oil, hydraulic oils, machining oils, and machining fluids.
- (d) Refractory storage not requiring air pollution control equipment.
- (e) Machining where an aqueous cutting coolant continuously floods the machining interface.
- (f) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two (2) cold cleaner degreasers, constructed in 1970, using less than five percent (5%) halogenated solvents by weight.
- (g) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kiloPascals; 15 millimeters of mercury; or 0.3 pounds per square inch measured at 38°C (100°F); or
  - (2) having a vapor pressure equal to or less than 0.7 kiloPascals; 5 millimeters of mercury; or 0.1 pounds per square inch measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.
- (h) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (i) Closed loop heating and cooling systems.
- (j) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- (k) Any operation using aqueous solutions containing less than 1 percent by weight of VOCs excluding HAPs.
- (l) Noncontact cooling tower systems with either of the following:
  - Forced and induced draft cooling tower system not regulated under a NESHAP.
- (m) Heat exchanger cleaning and repair.
- (n) Paved and unpaved roads and parking lots with public access.
- (o) Underground conveyors.
- (p) Asbestos abatement projects regulated by 326 IAC 14-10.
- (q) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (r) Mold release agents using low volatile products (vapor pressure less than or equal to 2 kilopascals measured at 38°C).
- (s) A laboratory as defined in 326 IAC 2-7-1(21)(D).

- (t) Farm operations.
- (u) One (1) sand pile, maximum input: 15,242 tons of loose sand per year.

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) for a Federally Enforceable State Operating Permit (FESOP).

A.5 Prior Permits Superseded [326 IAC 2-1.1-9.5]

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

## **SECTION B GENERAL CONDITIONS**

### **B.1 Permit No Defense [IC 13]**

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.

### **B.2 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.3 Permit Term [326 IAC 2-8-4(2)] [326 IAC 2-1.1-9.5]**

This permit 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.

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

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, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

### **B.5 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.6 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.7 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.8 Duty to Provide Information [326 IAC 2-8-4(5)(E)]**

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ, 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ, 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.9 Compliance Order Issuance [326 IAC 2-8-5(b)]**

IDEM, OAQ 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.10 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.11 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. The initial certification shall cover the time period from the date of final permit issuance through December 31 of the same year. All subsequent 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 July 1 of each year to:

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

- (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, 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, may require to determine the compliance status of the source.

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

B.12 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 prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each facility:
- (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.

If due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date 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

The PMP extension notification does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, 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 PMP does not require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1(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.13 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 the Northwest Regional Office, 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.: 317-233-5674 (ask for Compliance Section)

Facsimile No.: 317-233-5967

Northwest Regional Office: 219-757-0265, Facsimile Number: 219-757-0267

- (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

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 the "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 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 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.14 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

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 the "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.15 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 FESOP modification, revocation and reissu-

ance, 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 the "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 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 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 at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.16 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 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(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

- (b) Timely Submittal of Permit Renewal [326 IAC 2-8-3]
  - (1) A timely renewal application is one that is:
    - (A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
    - (B) 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 on or before the date it is due.

- (2) If IDEM, OAQ, upon receiving a timely and complete 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.

- (c) **Right to Operate After Application for Renewal [326 IAC 2-8-9]**  
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 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 any additional information identified as needed to process the application.

B.17 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

Any such application shall be certified by the "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)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.18 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

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 trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, to public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ 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 emissions 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.19 Permit Revision 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.20 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, 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.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10] [IC 13-17-3-2]

(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

The application which shall be submitted by the Permittee does require the certification by the "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 immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 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.23 Advanced Source Modification Approval [326 IAC 2-8-4(11)] [326 IAC 2-1.1-9]

(a) The requirements to obtain a permit revision under 326 IAC 2-8-11.1 are satisfied by this permit for the proposed emission units, control equipment or insignificant activities in Sections A.2 and A.3.

(b) Pursuant to 326 IAC 2-1.1-9 any permit authorizing construction may be revoked if

construction of the emission unit has not commenced within eighteen (18) months from the date of issuance of the permit, or if during the construction work is suspended for a continuous period of one (1) year or more.

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 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than one hundred (100) pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

**C.2 Overall Source Limit [326 IAC 2-8] [326 IAC 2-2] [326 IAC 2-3]**

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 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)) and 326 IAC 2-3 (Emission Offset) 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) 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.

(c) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

**C.3 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 forty percent (40%) 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.4 Open Burning [326 IAC 4-1] [IC 13-17-9]

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

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

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

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- (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

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 the "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. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

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

#### **C.8 Performance Testing [326 IAC 3-6]**

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- (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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "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 the "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 not later than forty-five (45) days after the completion of the testing. An extension may be granted

by IDEM, OAQ 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.9 Compliance Requirements [326 IAC 2-1.1-11]**

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

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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 that 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

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

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

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

**C.11 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]**

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

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- (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.13 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.14 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.15 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

#### C.16 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 makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner 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.17 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 the "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 Branch, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204-2251
- (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 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 the "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (e) The first report covered the period commencing on the date of issuance of the original

FESOP and ended on the last day of the reporting period. All subsequent reporting periods shall be based on calendar years.

### **Stratospheric Ozone Protection**

#### **C.18 Compliance with 40 CFR 82 and 326 IAC 22-1**

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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)]: Foundry Operations**

- (a) One (1) scrap and charge handling process, constructed in 1970, not exhausting through a stack, capacity: 4.95 tons of metal per hour.
- (b) One (1) natural gas-fired scrap charge preheater, identified as HEAT2, constructed in 1976, exhausting through stack 2, heat input capacity: 2.2 million British thermal units per hour.
- (c) Two (2) electric induction furnaces, identified as FRN03 and FRN04, constructed in 2000, equipped with an optional fabric filter (K4) and exhausting through stack K4 and general building exhausts A and B, maximum charge rate: 4.95 tons of metal per hour, total.
- (d) Four (4) natural gas-fired ladle heaters, exhausting through the general building ventilation, heat input capacity: 2.7 million British thermal units per hour, total.
- (e) Magnesium treatment operations, operating since 1974, exhausting through general building exhausts A and B, capacity: 4.95 tons of metal per hour.
- (f) Pouring, casting and cooling operations, with a total capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, consisting of the following:
  - (1) One (1) pouring and cooling line, identified as Power & Free, constructed in 1990 and modified in 2004, exhausting through stacks 1 through 5 and 32.
  - (2) One (1) casting and cooling area, identified as TURN3, constructed in 1980, exhausting through stack 24.
- (g) One (1) shakeout and degating operation, constructed in 1980 and modified in 1994, capacity: 4.95 tons of metal and 4.95 tons of sand per hour.
- (h) One (1) shotblast machine, identified as WHE02, constructed in 1983, controlled by an integral dust collector (K1) and exhausting inside the building, capacity: 4.95 tons of castings per hour.
- (i) One (1) cutoff saw, identified as SAW03, constructed in 1970, equipped with an optional fabric filter (K3) and exhausting inside the building, capacity: 4.95 tons of metal per hour.
- (j) One (1) sand handling operation, constructed in 1970, including nine (9) sand silos, belt conveyors, pneumatic conveyors and fork lifts, controlled by one (1) dust collector (K2) and eight (8) bin vent filters (K5, K6, K7, K8, K9, K10, K11 and K12) exhausting inside the source, capacity: 4.95 tons of sand per hour.
- (k) Nineteen (19) shell molding machines, identified as MOL01 through MOL019, two (2) constructed in 1970, two (2) constructed in 1974, one (1) constructed in 1975, one (1) constructed in 1978, one (1) constructed in 1980, two (2) constructed in 1983, two (2) constructed in 1986, two (2) constructed in 1992, two (2) constructed in 1993 and four (4) constructed in 1995, each equipped with a natural gas-fired heater, exhausting through stacks 13, 14, 17, 15, 16, 26, 28, and 31, using a release agent with no VOC, capacity: 700 pounds of pre-coated sand per hour, each, 33.25 pounds of binder per hour, each, and 1.0 million British thermal unit per hour, each.
- (l) Eight (8) shell core machines, identified as COR01 through COR08, two (2) constructed in 1974, one (1) constructed in 1979, one (1) constructed in 1980, two (2) constructed in 1983, and two (2) constructed in 1999, each equipped with a natural gas-fired heater, exhausting through stacks 18 and 31, using a release agent with no VOC, capacity: 225 pounds of pre-coated sand per hour, each, 10.69 pounds of binder per hour, each, and 1.75 million British thermal units per hour, total.
- (m) Truck loading and unloading, maximum throughput: 4.95 tons of sand per hour.

- (n) One (1) shell molding machine, identified as MOL020, equipped with a natural gas-fired heater, exhausting to stacks 28 and 31, using a release agent with no VOC, capacity: 700 pounds of pre-coated sand per hour, 33.25 pounds of binder per hour and 1.0 million British thermal unit per hour.
- (o) Four (4) shell core machines, identified as COR09 through COR12, each equipped with a natural gas-fired heater, exhausting through stacks 18 and 31, capacity: 300 pounds of sand per hour, 14.25 pounds of binder per hour, and 0.21875 million British thermal units per hour, each.

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

## Construction Conditions

### General Construction Conditions

#### D.1.1 Permit No Defense

This permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

### Effective Date of the Permit

#### D.1.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.

#### D.1.3 Modification to Construction Conditions [326 IAC 2]

All requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for revisions pursuant to 326 IAC 2.

## Operation Conditions

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

#### D.1.4 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

The metal throughput at the shakeout and degating process shall not exceed 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, and the VOC emissions from the shakeout and degating shall not exceed 1.20 pounds per ton of metal produced. This will limit the potential VOC emissions to less than twenty-five (25) tons per year from the shakeout and degating operations. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

#### D.1.5 PM and PM<sub>10</sub> Minor Limits [326 IAC 2-2] [326 IAC 2-8]

The amount of metal processed by the source shall be limited to less than 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, and the amount of sand processed by the source shall be limited to less than 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. These limitations, in conjunction with the emissions limitations listed in the table in this condition, shall limit the potential to emit PM and PM<sub>10</sub> to less than 100 tons per year from the entire source. Therefore, the requirements of 326 IAC 2-2, PSD, and 326 IAC 2-7, Part 70, are not applicable.

Facility/Process	PM Emission Limit (lbs/ton)	PM <sub>10</sub> Emission Limit (lbs/ton)
Scrap and Charge Handling including Scrap Charge Preheater (HEAT2)	0.60	0.36
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	0.90	0.86
Magnesium treatment	1.80	1.80
Pouring and cooling (Power & Free and TURN3) (Total emission limit for both pouring and cooling)	1.60	1.90
Shakeout and degating	0.10	0.10
Shotblast Machine	0.0187	0.00187
Cutoff saw (SAW03)	0.01	0.0045
Sand handling	0.214	0.032
Truck loading and unloading	0.36	0.17

**D.1.6 Particulate Matter (PM) [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from facilities at this source shall be limited as follows:

Facility/Process	Process weight rate (tons/hr)	Allowable Emissions (lbs/hr)
Scrap and Charge Handling including Scrap Charge Preheater (HEAT2)	4.95	11.97
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	4.95	11.97
Magnesium treatment	4.95	11.97
Pouring and cooling (Power & Free and TURN3) (Total emission limit for both pouring and cooling)	9.90 (metal and sand)	19.05
Shakeout and degating	9.90 (metal and sand)	19.05
Sand handling	4.95	11.97
Truck loading and unloading	4.95	11.97

These limitations are based upon the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and  
 P = process weight rate in tons per hour

**D.1.7 Preventive Maintenance Plan [326 IAC 2-8-4(9)]**

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A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the scrap and charge handling including the scrap charge preheater, two (2) electric induction furnaces, magnesium treatment, pouring and cooling operations, shakeout and degating, shotblast machine, cutoff saw, sand handling, and truck loading and unloading, and the control devices for the sand handling and the shotblast machine.

**Compliance Determination Requirements**

**D.1.8 Particulate Control**

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- (a) In order to comply with Conditions D.1.5 and D.1.6, the one (1) dust collector (K2) and the eight (8) bin vent filters (K5, K6, K7, K8, K9, K10, K11 and K12) for particulate control at the one (1) sand handling operation shall be in operation and control emissions from the sand handling operation at all times that the sand handling operation is in operation.
- (b) In the event that a bag failure is observed in a multi-compartment bag filter, 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.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]**

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- (a) Within 36 months after issuance of this FESOP, in order to demonstrate compliance with Conditions D.1.5 and D.1.6, the Permittee shall perform PM and PM<sub>10</sub> testing for the sand handling emissions at the outlet of the dust collector (K2) utilizing 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. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. Testing shall be conducted in accordance with Section C- Performance Testing.
- (b) Within 36 months after issuance of this FESOP, in order to demonstrate compliance with Condition D.1.5, the Permittee shall perform PM and PM<sub>10</sub> testing for the shotblaster emissions at the outlet of the dust collector (K1) utilizing 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. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. Testing shall be conducted in accordance with Section C- Performance Testing.

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

**D.1.10 Visible Emissions Notations**

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- (a) Visible emission notations of the pouring and cooling operations (stacks 1 through 5, 24, and 32), shotblast machine, cut off saw, electric induction furnaces, magnesium treatment and sand handling exhausts 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 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.1.11 Parametric Monitoring

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- (a) The Permittee shall record the total static pressure drop across the dust collector (K1) used in conjunction with the shotblast machine, at least once per day when the process is in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range of 1.0 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 or Exceedances, shall be considered a deviation from this permit.
- (b) The Permittee shall record the total static pressure drop across the dust collector (K2) used in conjunction with the sand handling operations, at least once per day when the process is in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range of 1.0 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 or Exceedances, shall be considered a deviation from this permit.

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 shall be calibrated at least once every six (6) months.

#### D.1.12 Broken or Failed Bag or Cartridge Detection

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- (a) For a single compartment bag filters or cartridge dust collectors controlling emissions from a process operated continuously, failed units 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 bag filters or cartridge dust collectors 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 or Cartridge failure can be indicated by a significant drop in the 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.1.13 Record Keeping Requirements**

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- (a) To document compliance with Conditions D.1.4 and D.1.5, the Permittee shall maintain records of the amount of metal processed each month. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (b) To document compliance with Condition D.1.5, the Permittee shall maintain records of the amount of sand processed each month. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.
- (c) To document compliance with Condition D.1.10, the Permittee shall maintain records of daily visible emission notations of the pouring and cooling operations (stacks 1 through 5, 24, and 32), shotblast machine, cut off saw, electric induction furnaces, magnesium treatment and sand handling exhausts when exhausting to the atmosphere.
- (d) To document compliance with Condition D.1.11, the Permittee shall maintain records of the pressure drop across the dust collectors used in conjunction with the shot blast machine and sand handling operations.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**D.1.14 Reporting Requirements**

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A quarterly summary of the information to document compliance with Conditions D.1.4 and D.1.5 shall be submitted to the address 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).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY**

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

Source Name: Kingsbury Castings Division  
Source Address: 3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345  
Mailing Address: P.O. Box 639, LaPorte, Indiana 46350  
FESOP No.: F 091-15282-00078

**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: 317-233-5674  
Fax: 317-233-5967**

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

Source Name: Kingsbury Castings Division  
Source Address: 3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345  
Mailing Address: P.O. Box 639, LaPorte, Indiana 46350  
FESOP No.: F 091-15282-00078

**This form consists of 2 pages**

**Page 1 of 2**

- |   |
|---|
| <input type="checkbox"/> This is an emergency as defined in 326 IAC 2-7-1(12) <ul style="list-style-type: none"><li>• The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and</li><li>• The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16</li></ul> |
|---|

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, PM-10, SO <sub>2</sub> , VOC, NO <sub>x</sub> , 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**

**FESOP Quarterly Report**

Source Name: Kingsbury Castings Division  
Source Address: 3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345  
Mailing Address: P.O. Box 639, LaPorte, Indiana 46350  
FESOP No.: F 091-15282-00078  
Facility: Entire Source  
Parameter: Metal Processed  
Limit: 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month

YEAR: \_\_\_\_\_

Month	Metal Processed (tons)	Metal Processed (tons)	Metal Processed (tons)
	This Month	Previous 11 Months	12 Month Total

- No deviation occurred in this month.
- Deviation/s occurred in this month.  
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**

**FESOP Quarterly Report**

Source Name: Kingsbury Castings Division  
Source Address: 3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345  
Mailing Address: P.O. Box 639, LaPorte, Indiana 46350  
FESOP No.: F 091-15282-00078  
Facility: Entire Source  
Parameter: Sand Processed  
Limit: 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month

YEAR: \_\_\_\_\_

Month	Sand Processed (tons)	Sand Processed (tons)	Sand Processed (tons)
	This Month	Previous 11 Months	12 Month Total

- No deviation occurred in this month.
- Deviation/s occurred in this month.  
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**

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

Source Name: Kingsbury Castings Division  
 Source Address: 3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345  
 Mailing Address: P.O. Box 639, LaPorte, Indiana 46350  
 FESOP No.: F 091-15282-00078

**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 exists independent of the permit, shall be reported according to the schedule stated in the 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	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	
<b>Permit Requirement</b> (specify permit condition #)	
<b>Date of Deviation:</b>	<b>Duration of Deviation:</b>
<b>Number of Deviations:</b>	
<b>Probable Cause of Deviation:</b>	
<b>Response Steps Taken:</b>	

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

Form Completed by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

A certification is not required for this report.

**Indiana Department of Environmental Management  
Office of Air Quality**

Technical Support Document (TSD) for a New Source Construction and Federally  
Enforceable State Operating Permit (FESOP)

**Source Background and Description**

<b>Source Name:</b>	<b>Kingsbury Castings Division</b>
<b>Source Location:</b>	<b>3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345</b>
<b>County:</b>	<b>LaPorte</b>
<b>SIC Code:</b>	<b>3321</b>
<b>Operation Permit No.:</b>	<b>F 091-15282-00078</b>
<b>Permit Reviewer:</b>	<b>CarrieAnn Paukowits/MES</b>

The Office of Air Quality (OAQ) has reviewed a New Source Construction and FESOP application from Kingsbury Castings Division relating to the operation of a ductile iron foundry and an increase in the capacity of the existing foundry.

**Permitted Emission Units and Pollution Control Equipment**

The following emission units and pollution control devices were previously permitted at a capacity of 3.0 tons of metal per hour and 3.3 tons of sand per hour. This source is proposing a physical modification at the two (2) electric induction furnaces, which will increase the capacity to 4.95 tons of metal and 4.95 tons of sand per hour. This change will cause the source to require a Part 70 Operating Permit under 326 IAC 2-7 or a FESOP under 326 IAC 2-8. This source has opted for a FESOP.

- (a) One (1) scrap and charge handling process, constructed in 1970, not exhausting through a stack, capacity: 4.95 tons of metal per hour.
- (b) One (1) natural gas-fired scrap charge preheater, identified as HEAT2, constructed in 1976, exhausting through stack 2, heat input capacity: 2.2 million British thermal units per hour.
- (c) Two (2) electric induction furnaces, identified as FRN03 and FRN04, constructed in 2000, equipped with an optional fabric filter (K4) and exhausting through stack K4 and the general building ventilation, maximum charge rate: 4.95 tons of metal per hour, total.
- (d) Two (2) natural gas-fired ladle heaters, exhausting through the general building ventilation, heat input capacity: 2.7 million British thermal units per hour.
- (e) Magnesium treatment operations, operating since 1974, exhausting through the general building ventilation, capacity: 4.95 tons of metal per hour.
- (f) Pouring, casting and cooling operations, with a total capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, consisting of the following:
  - (1) One (1) pouring and cooling line, identified as Power & Free, constructed in 1990 and modified in 2004, exhausting through stacks 1 through 5 and 32.
  - (2) One (1) casting and cooling area, identified as TURN3, constructed in 1980, exhausting through stack 24.
- (g) One (1) shakeout and degating operation, constructed in 1980 and modified in 1994, capacity: 4.95 tons of metal and 4.95 tons of sand per hour.

- (h) One (1) shotblast machine, identified as WHE02, constructed in 1983, controlled by an integral dust collector (K1) and exhausting inside the building, capacity: 4.95 tons of castings per hour.
- (i) One (1) cutoff saw, identified as SAW03, constructed in 1970, equipped with an optional fabric filter (K3) and exhausting inside the building, capacity: 4.95 tons of metal per hour.
- (j) One (1) sand handling operation, constructed in 1970, including nine (9) sand silos, belt conveyors, pneumatic conveyors and fork lifts, controlled by one (1) dust collector (K2) and eight (8) bin vent filters (K5, K6, K7, K8, K9, K10, K11 and K12) exhausting inside the source, capacity: 4.95 tons of sand per hour.
- (k) Nineteen (19) shell molding machines, identified as MOL01 through MOL019, two (2) constructed in 1970, two (2) constructed in 1974, one (1) constructed in 1975, one (1) constructed in 1978, one (1) constructed in 1980, two (2) constructed in 1983, two (2) constructed in 1986, two (2) constructed in 1992, two (2) constructed in 1993 and four (4) constructed in 1995, each equipped with a natural gas-fired heater, exhausting through stacks 13, 14, 17, 15, 16, 26, 28, and 31, using a release agent with no VOC, capacity: 700 pounds of pre-coated sand per hour, each, 33.25 pounds of binder per hour, each, and 1.0 million British thermal unit per hour, each.
- (l) Eight (8) shell core machines, identified as COR01 through COR08, two (2) constructed in 1974, one (1) constructed in 1979, one (1) constructed in 1980, two (2) constructed in 1983, and two (2) constructed in 1999, each equipped with a natural gas-fired heater, exhausting through stacks 18 and 31, using a release agent with no VOC, capacity: 225 pounds of pre-coated sand per hour, each, 10.69 pounds of binder per hour, each, and 1.75 million British thermal units per hour, total.
- (m) Truck loading and unloading, maximum throughput: 4.95 tons of sand per hour.

#### **Unpermitted Emission Units and Pollution Control Equipment**

There are no unpermitted facilities operating at this source during this review process.

#### **New Emission Units and Pollution Control Equipment Receiving Prior Approval**

The application includes information relating to the prior approval for the construction and operation of the following equipment pursuant to 326 IAC 2-8-4(11):

- (n) One (1) shell molding machine, identified as MOL020, equipped with a natural gas-fired heater, exhausting to stacks 28 and 31, using a release agent with no VOC, capacity: 700 pounds of pre-coated sand per hour, 33.25 pounds of binder per hour and 1.0 million British thermal unit per hour.
- (o) Four (4) shell core machines, identified as COR09 through COR12, each equipped with a natural gas-fired heater, exhausting through stacks 18 and 31, capacity: 300 pounds of sand per hour, 14.25 pounds of binder per hour, and 0.21875 million British thermal units per hour, each.

As stated above, this source is proposing a physical modification at the two (2) electric induction furnaces, which will increase the capacity from 3.0 tons of metal and 3.3 tons of sand per hour to 4.95 tons of metal and 4.95 tons of sand per hour.

### Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(21):

- (a) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, including thirty-six (36) space heaters with a total capacity of 15.851 million British thermal units per hour.
- (b) Combustion source flame safety purging on startup.
- (c) 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. This operation was constructed in 1998, the totes have a 300 gallon capacity, the throughput is less than 10,000 gallons per month, and it is equipped with a vapor control system.
- (d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month. This is a diesel fuel dispensing facility, constructed in 1989, the totes have a capacity of 150 gallons, and the throughput is less than 10,000 gallons per month.
- (e) 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 oil, hydraulic oils, machining oils, and machining fluids.
- (f) Refractory storage not requiring air pollution control equipment.
- (g) Machining where an aqueous cutting coolant continuously floods the machining interface.
- (h) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two (2) cold cleaner degreasers, constructed in 1970, using less than five percent (5%) halogenated solvents by weight.
- (i) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kiloPascals; 15 millimeters of mercury; or 0.3 pounds per square inch measured at 38°C (100°F); or
  - (2) having a vapor pressure equal to or less than 0.7 kiloPascals; 5 millimeters of mercury; or 0.1 pounds per square inch measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.
- (j) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- (k) Closed loop heating and cooling systems.
- (l) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

- (m) Any operation using aqueous solutions containing less than 1 percent by weight of VOCs excluding HAPs.
- (n) Noncontact cooling tower systems with either of the following:  
Forced and induced draft cooling tower system not regulated under a NESHAP.
- (o) Heat exchanger cleaning and repair.
- (p) Paved and unpaved roads and parking lots with public access.
- (q) Underground conveyors.
- (r) Asbestos abatement projects regulated by 326 IAC 14-10.
- (s) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- (t) Mold release agents using low volatile products (vapor pressure less than or equal to 2 kilopascals measured at 38°C).
- (u) A laboratory as defined in 326 IAC 2-7-1(21)(D).
- (v) Farm operations.
- (w) One (1) sand pile, maximum input: 15,242 tons of loose sand per year.

### Existing Approvals

The source has been operating under the following previous approvals including:

- (a) CP 091-4827-00078, issued on February 3, 1997;
- (b) R 091-10004-00078, issued on October 2, 1998; and
- (c) Exemption 091-18193-00078, issued on December 1, 2003.

All conditions from previous approvals were incorporated into this FESOP except the following:

The following terms and conditions from previous approvals have been revised in this permit:

- (a) CP 091-4827-00078, issued on February 3, 1997

Operation Condition 4: The total input metal to the induction furnaces shall be limited to 2058.6 tons per month. This production limitation is equivalent to particulate matter (PM) emissions of 8.25 tons per month. During the first 365 days of operation, the input material usage shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

Reason Revised: This proposed permit includes an increase in the capacity of the source. The emissions have been re-evaluated (see Appendix A). The source will still limit the potential to emit in order to remain a minor source pursuant to 326 IAC 2-2, PSD, as indicated in the *State Rule Applicability - Entire Source* section of this document. The

limit has changed to an annual throughput limit of less than 33,394 tons of metal and less than 33,394 tons of sand.

- (b) CP 091-4827-00078, issued on February 3, 1997

Operation Condition 6a through 6j: That the particulate matter (PM) emissions will be considered in compliance with 326 IAC 6-3 (Process Operations) provided that:

- a) The particulate matter emissions from the scrap and charge handling operation do not exceed the allowable particulate matter (PM) emission rate of 1.80 pounds per hour;
- b) The particulate matter emissions from each of the furnaces do not exceed the allowable particulate matter (PM) emission rate of 1.35 pounds per hour;
- c) The particulate matter emissions from the magnesium treatment operation do not exceed the allowable particulate matter (PM) emission rate of 3.55 pounds per hour;
- d) The particulate matter emissions from the pouring/casting operation do not exceed the allowable particulate matter (PM) emission rate of 3.11 pounds per hour;
- e) The particulate matter emissions from the cooling operation do not exceed the allowable particulate matter (PM) emission rate of 1.55 pounds per hour;
- f) The particulate matter emissions from the castings shakeout operation do not exceed the allowable particulate matter (PM) emission rate of 3.55 pounds per hour;
- g) The particulate matter emissions from the castings cleaning/finishing operation do not exceed the allowable particulate matter (PM) emission rate of 0.05 pounds per hour;
- h) The particulate matter emissions from the core making operation do not exceed the allowable particulate matter (PM) emission rate of 0.73 pounds per hour;
- i) The particulate matter emissions from the mold making operation do not exceed the allowable particulate matter (PM) emission rate of 2.91 pounds per hour;
- j) The particulate matter emissions from the sand system do not exceed the allowable particulate matter (PM) emission rate of 2.14 pounds per hour;

Reason Revised: This proposed permit includes an increase in the capacity of the source. Therefore, the allowable hourly emission rate of each process is revised in this permit. The source will still comply with 326 IAC 6-3-2, revised in June 2002, as indicated in the *State Rule Applicability - Individual Facilities* section of this document. The new limits are listed in that section of this document.

#### **Air Pollution Control Justification as an Integral Part of the Process**

The company has submitted the following justification such that the dust collector for the shotblasting operation be considered as an integral part of the finishing process:

- (a) The shotblast system is designed to continuously recycle the shot because the dust collector removes the sand and dust from the shot curtain. Kingsbury Castings observes a significant cost savings from separating the sand/dust from the shot in order to allow the shot to be reused. Currently, Kingsbury Castings spends approximately \$725 per ton of shot. Kingsbury operates the shotblast system 5,200 hours per year. The hourly potential amount of shot thrown is 22.5 tons per hour, equivalent to 117,000 tons in a

5,200 hour operating year. In a 5,200 hour operating year, Kingsbury Castings purchases 35 tons of shot. Thus, 99.97% of shot is recycled through the system. The cost of the 116,965 tons of shot that does not need to be purchased because of the control device is \$84,799,625 per year. The annualized cost of the control device is \$4,700 per year. Thus, the cost savings due to operating the control is \$84,794,925 per year. In addition, recycling the shot also decreases the quantity of waste which would need to be disposed of from the blasting operations if the sand, dust and shot were not segregated. The reduction in disposal and purchasing costs has an overwhelming positive net economic effect.

- (b) The process cannot operate without the control equipment because the shotblast system is designed and built to function with the dust collector serving as the mechanism to maintain negative pressure at the machine inlet points and to create the air curtain necessary to separate the sand and dust from the shot curtain prior to cleaning the casting. The manufacturer did not design the blasting system to utilize a separate auxiliary fan. The dust collector pulls the less dense, yet abrasive, sand and dust material out of the shot curtain. This allows only the shot to re-enter the cleaning chamber of the machine. The sand, by its abrasive nature, would damage the castings if it were to re-enter the cleaning chamber. If that same sand and dust, again abrasive by nature, were to go through the fan wheel without being stopped by the dust collector, it would quickly destroy the fan wheel.
- (c) The control equipment serves a primary purpose other than pollution control since the dust collector maintains the negative pressure at the machine's inlet points and creates the air curtain necessary to separate the sand and dust from the shot curtain prior to cleaning the casting. In addition, shotblast manufacturers have been providing these machines with dust collection since the 1930s, which is prior to the promulgation of any air permitting regulations.

The shotblasting system must maintain a pressure drop of 1 to 7 inches of water to operate properly. The cartridges in the dust collector are extremely important because they maintain the air curtain in order to separate the sand and dust from the shot curtain prior to cleaning the casting. The shotblasting system has been manufactured to operate properly by utilizing the cartridges. In order to clean the castings properly without causing damage, the air curtain must be maintained according to the manufacturer's specifications. Otherwise, the casting produced will be damaged or not cleaned to the customer's satisfaction.

- (d) Kingsbury Castings must maintain the shotblasting system according to best management practices. In addition, Kingsbury Castings would not modify the manufacturer's blasting system (i.e., removing or altering the dust collector) after being permitted by the IDEM to operate as one system. Changing the operation of the blasting system would be a direct violation of the source's permit. In order to ensure compliance with the source's permit and achieve the casting finish necessary for retail sell, the dust collector will be used at all times while the shotblasting system is operating per the manufacturer's specifications.

IDEM, OAQ has evaluated the justifications and agreed that the dust collector will be considered as an integral part of the shotblasting. Therefore, the permitting level will be determined using the potential to emit after control by the dust collector. Operating conditions in the proposed permit will specify that this dust collector shall operate at all times when the shotblasting is in operation.

#### **Enforcement Issue**

There are no enforcement actions pending.

### Recommendation

The staff recommends to the Commissioner that the FESOP 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 application for the purposes of this review was received on January 31, 2002. Additional information was received on May 16, 2002, October 29, 2002, January 6, 2003, February 25, 2003, March 25, 2003, November 14, 2003, March 5, 11 and 29, 2004, May 3 and 14, September 12, and October 11, 17, 20, 21 and 31, 2005.

There was no notice of completeness letter mailed to the source.

### Emission Calculations

See pages 1 through 9 of Appendix A of this document for detailed emission calculations.

### Potential to Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

Pollutant	Potential to Emit (tons/yr)
PM	201
PM <sub>10</sub>	128
SO <sub>2</sub>	0.548
VOC	37.3
CO	16.0
NO <sub>x</sub>	19.2
Lead	0.932

HAPs	Potential to Emit (tons/yr)
Chromium	0.907
Manganese	1.19
Nickel	0.832
Lead	0.932

HAPs	Potential to Emit (tons/yr)
Phenol	4.42
Acrolein	0.097
Benzene	0.002
Formaldehyde	0.081
Hydrogen Cyanide	1.81
Xylenes	1.45
Toluene	0.003
Hexane	0.217
Napthalene	0.119
Total Aromatic Amines	4.82
Total C2 to C5 Aldehydes	1.20
Dichlorobenzene	0.0001
Cadmium	0.0001
Tetrachloroethene	0.002
Total	18.1

The potential to emit (as defined in 326 IAC 2-7-1(29)) of PM<sub>10</sub> will be equal to or greater than one hundred (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.

**Potential to Emit After Issuance**

The source has opted to remain a FESOP source. 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 FESOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/emission unit	Potential To Emit (tons/year)							
	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Lead	HAPs
Scrap and Charge Handling	10.0	6.01	-	-	-	-	0.0003	0.154 individual 0.401 total
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	15.0	14.4	-	-	-	-	0.0005	0.231 individual 0.601 total
Magnesium	30.1	30.1	-	0.083	-	-	0.921	0.709 individual

Process/emission unit	Potential To Emit (tons/year)							
	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Lead	HAPs
treatment								0.709 total
Pouring and Cooling (Power & Free and TURN3) (Total emission limit for both pouring and cooling)	26.7	31.7	0.334	2.24	-	0.167	0.0008	1.39 individual 9.07 total
Shakeout and degating	1.67	1.67	-	20.0	-	-		
Shotblaster	0.312	0.031	-	-	-	-	0.008	0.005 individual 0.012 total
Cutoff saw (SAW03)	0.167	0.075	-	-	-	-	-	-
Sand handling	3.57	0.534	-	-	-	-	-	-
Truck loading and unloading	6.01	2.84	-	-	-	-	-	-
Core and Mold Making	-	-	-	4.74	-	-	-	3.40 individual 3.40 total
Combustion and Insignificant Activites	6.34	4.11	0.114	2.01	16.0	19.2	0.001	1.16 individual 1.55 total
Total Emissions	99.8	91.5	0.448	29.1	16.0	19.4	0.932	3.41 individual 15.7 total

The values for PM and PM<sub>10</sub> in the table are the limited potential to emit as shown under “326 IAC 2-2” in the *State Rule Applicability - Entire Source* section of this document. The potential to emit VOC from the shakeout and degating is limited as shown under “326 IAC 8-1-6” in the *State Rule Applicability - Individual Facilities* section of this document. All other values represent the limited potential to emit based on the production limits required to limit PM, PM<sub>10</sub> and VOC emissions and the emission factors for each pollutant and process. The potential to emit is slightly different from that shown on page 9 of 9 of Appendix A due to rounding.

**County Attainment Status**

The source is located in LaPorte County.

Pollutant	Status
PM <sub>2.5</sub>	Attainment
PM <sub>10</sub>	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
1-Hour Ozone	Attainment
8-Hour Ozone	Marginal Nonattainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>) 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 NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. LaPorte County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements of Emission Offset, 326 IAC 2-3.
- (b) LaPorte County has been classified as unclassifiable or attainment for PM<sub>2.5</sub>. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM<sub>2.5</sub> emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM<sub>2.5</sub> emissions, it has directed states to regulate PM<sub>10</sub> emissions as a surrogate for PM<sub>2.5</sub> emissions.
- (c) LaPorte County has been classified as attainment or unclassifiable in Indiana for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (d) Fugitive Emissions  
 Since this type of operation is one of the 28 listed source categories under 326 IAC 2-2 or 2-3, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are counted toward determination of PSD and Emission Offset applicability.

**Source Status**

Existing Source PSD, Part 70, or FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	82.3
PM <sub>10</sub>	75.0
SO <sub>2</sub>	0.361
VOC	22.1
CO	16.0

<b>Pollutant</b>	<b>Emissions (tons/yr)</b>
NO <sub>x</sub>	19.1
Lead	0.698
Worst Case Single HAP (Phenol)	2.52
Combination HAPs	10.5

- (a) This existing source is not a major stationary source because even though it is one of the 28 listed source categories, it does not emit one hundred (100) tons per year or greater of any regulated pollutant.
- (b) This table is based on the limitations in CP 091-4827-00078, issued on February 3, 1997 (see the second table of Page 8 of 9 of Appendix A).

#### **Federal Rule Applicability**

- (a) On October 15, 2003, revisions to 40 CFR 60, Subpart Kb, became effective. As of the date this permit is being issued these revisions have not been incorporated into the Indiana state rules. Therefore, the requirements from the previous version of 40 CFR 60, Subpart Kb, published in the federal register on August 8, 1987, which is referenced by 326 IAC 12, will remain applicable until the revisions are incorporated into the Indiana State Implementation Plan (SIP) and the condition is modified in a subsequent permit action. See the "State Rule Applicability - Individual Facilities" section of this document for the applicability of 326 IAC 12.

The insignificant storage tanks at this source each have a capacity less than seventy-five (75) cubic meters. Therefore, the requirements of 40 CFR 60, Subpart Kb are not included in the permit.

- (b) The requirements of 40 CFR 63, Subpart T, National Emission Standards for Halogenated Solvent Cleaning, are not included in the permit for the two (2) insignificant cold cleaner degreasers, because the degreasers do not use halogenated HAP solvents in total concentration greater than five percent (5%) by weight.
- (c) The requirements of 40 CFR 63, Subpart R, National Emissions Standards for Gasoline Distribution Facilities, are not included in the permit for the insignificant gasoline transfer and dispensing operation, because that facility does not receive gasoline by pipeline, ship or barge and does not have a throughput greater than 75,700 liters per day.
- (d) The requirements of 40 CFR 63, Subpart EEEEE, National Emissions Standards for Iron and Steel Foundries, are not included in the permit for this source because this source is not a major source of HAPs.

#### **State Rule Applicability – Entire Source**

##### **326 IAC 1-7 (Stack Height Provisions)**

All stacks have potential particulate emissions less than twenty-five (25) tons per year, each. Therefore, the requirements of 326 IAC 1-7 are not applicable.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

- (a) Construction of the ductile iron foundry that commenced prior to August 7, 1977 was not subject to the PSD requirements of 326 IAC 2-2.
- (b) The throughput and emission limitations of CP 091-4827-00078, issued on February 3, 1997, limited the potential to emit of PM to less than 100 tons per year from the entire source. Therefore, the source remained a minor source pursuant to 326 IAC 2-2, PSD, following the modification included in that permit.
- (c) The amount of metal processed by the source shall be limited to less than 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month, and the amount of sand processed by the source shall be limited to less than 33,394 tons per twelve (12) consecutive month period, with compliance determined at the end of each month. These limitations, in conjunction with the emissions limitations listed in the table, shall limit the potential to emit PM and PM<sub>10</sub> to less than 100 tons per year from the entire source. Therefore, this source will remain a minor source pursuant to 326 IAC 2-2, PSD.

Facility/Process	PM Emission Limit (lbs/ton)	PM <sub>10</sub> Emission Limit (lbs/ton)	PM Emissions (tons/yr)	PM <sub>10</sub> Emissions (tons/yr)
Scrap and Charge Handling, Including the Scrap Charge Preheater	0.60	0.36	10.0	6.01
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	0.90	0.86	15.0	14.4
Magnesium treatment	1.80	1.80	30.1	30.1
Pouring and cooling (Power & Free and TURN3) (Total emission limit for both pouring and cooling)	1.60	1.90	26.7	31.7
Shakeout and degating	0.10	0.10	1.67	1.67
Shotblast Machine	0.0187	0.00187	0.312	0.031
Cutoff saw (SAW03)	0.01	0.0045	0.167	0.075
Sand handling	0.214	0.032	3.57	0.534
Truck loading and unloading	0.36	0.17	6.01	2.84
<b>Total</b>			<b>93.5</b>	<b>87.4</b>

The unrestricted potential PM and PM<sub>10</sub> emissions from all other processes (combustion and insignificant activities) are 6.34 and 4.11 tons per year, respectively. Therefore, the total potential to emit of the source is limited to less than 100 tons per year of PM and PM<sub>10</sub>.

In order to comply with this limit, one (1) dust collector (K2) and the eight (8) bin vent filters (K5, K6, K7, K8, K9, K10, K11 and K12) for particulate control at the one (1) sand handling operation shall be in operation and control emissions from the sand handling operation at all times that the sand handling operation is in operation.

The pound per ton emission limits in the table are the AP-42 emission factors for all processes, except for the shotblaster, pouring and cooling, and shakeout and degating. Those emission limits were developed using the following methods:

- (1) The emission limit for the shotblaster is the AP-42 emission factor multiplied by the emissions after controls from the baghouse (1-control efficiency), since the control is integral to the process. The control efficiency has been guaranteed by the vendor.
- (2) The emission limit for the pouring and cooling is the addition of the alternate emission factor for the pouring/casting to the AP-42 emission factor for cooling. The alternate emission factor for the pouring/casting was supported by a test conducted on July 23, 2003, and validated by IDEM, OAQ, on November 3, 2003. The alternate emission factors include a safety factor to account for variability in stack testing. For pouring/casting, the emission factors developed by the test were 0.162 lb PM/ton metal and 0.449 lb PM<sub>10</sub>/ton metal, whereas the emission factors used in the calculations and used to develop the emission limitations are 0.20 lbs PM/tons of metal and 0.50 lbs PM<sub>10</sub>/ton metal. The emission factor for pouring/casting was added to the AP-42 emission factor for cooling, to calculate the emission limitations of 1.60 lbs PM/ton of metal and 1.90 lbs PM<sub>10</sub>/ton of metal.
- (3) The emission limit for the shakeout and degating was supported by a test conducted on September 11, 2002, and validated by IDEM, OAQ, on December 19, 2002. The alternate emission factors include a safety factor to account for variability in stack testing. The emission factors developed by the test were 0.027 lb PM/ton metal and 0.081 lb PM<sub>10</sub>/ton metal, whereas the emission factor used in the calculations and used to develop the emission limitations is 0.10 lbs PM and PM<sub>10</sub>/ton metal.

#### 326 IAC 2-3 (Emission Offset)

The unrestricted potential VOC and NO<sub>x</sub> emissions are less than 100 tons per year. Therefore, the potential to emit is less than 100 tons per year, and the requirements of 326 IAC 2-3 are not applicable.

#### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The potential emissions of individual HAPs are less than ten (10) tons per year for each HAP and the potential emissions of any combination of HAPs are less than twenty-five (25) tons per year. Therefore, the requirements of 326 IAC 2-4.1 are not applicable.

#### 326 IAC 2-6 (Emission Reporting)

This source is not located in Lake or Porter County with the potential to emit greater than twenty-five (25) tons per year of NO<sub>x</sub>, does not emit five (5) tons per year or more of lead and does not require a Part 70 Operating Permit. Therefore, the requirements of 326 IAC 2-6 do not apply.

#### 326 IAC 2-8-4 (FESOP)

- (a) Pursuant to this rule, the amount of PM<sub>10</sub> shall be limited to less than one hundred (100) tons per year. Therefore, the requirements of 326 IAC 2-7, do not apply. The limitations required to make the source a minor source pursuant to 326 IAC 2-2, PSD, will also result in compliance with 326 IAC 2-8, FESOP.
- (b) The unrestricted potential CO, SO<sub>2</sub>, VOC and NO<sub>x</sub> emissions are less than 100 tons per year. Therefore, this source will comply with the requirements of 326 IAC 2-8, FESOP.
- (c) The unrestricted potential emissions of each individual HAP are less than ten (10) tons per year and the unrestricted potential emissions of total HAPs are less than twenty-five (25) tons per year. Therefore, this source will comply with the requirements of 326 IAC 2-8, FESOP.

#### 326 IAC 5-1 (Opacity Limitations)

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 the permit:

- (a) Opacity shall not exceed an average of forty percent (40%) 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 6-5 (Fugitive Particulate Matter Emission Limitations)

This source was constructed before December 13, 1985. Therefore, the requirements of 326 IAC 6-5 are not applicable.

### **State Rule Applicability – Individual Facilities**

#### 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) The total of all insignificant welding operations at this source consume less than six hundred twenty-five (625) pounds of rod or wire per day, based on maximum potential usage. Therefore, pursuant to 326 IAC 6-3-1(a)(9), the welding operations are exempt from the requirements of 326 IAC 6-3-2.
- (b) Less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness or less is cut at the insignificant torch cutting at this source, based on maximum potential usage. Therefore, pursuant to 326 IAC 6-3-1(a)(10), the torch cutting operations are exempt from the requirements of 326 IAC 6-3-2.
- (c) The shotblast machine (WHE02), and the cut off saw (SAW03) each have potential emissions less than five hundred fifty-one thousandths (0.551) pound per hour. Therefore, pursuant to 326 IAC 6-3-1(b)(14), these operations are exempt from the requirements of 326 IAC 6-3-2.
- (d) Pursuant to 326 IAC 6-3-2, the particulate from the facilities at this source, shall be limited as follows:

Facility/Process	Process weight rate (tons/hr)	Allowable Emissions (lbs/hr)	Potential to Emit before controls (unless control is integral) (lbs/hr)	Potential to emit after Controls (lbs/hr)
Scrap and Charge Handling including the Scrap Charge Preheater	4.95	11.97	2.97	N/A
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	4.95	11.97	4.46	N/A
Magnesium treatment	4.95	11.97	8.91	N/A
Pouring and cooling (Power & Free and TURN3)	9.90 (metal and sand)	19.0	7.92	N/A
Shakeout and degating	9.90 (metal and sand)	19.0	0.50	N/A
Sand handling	4.95	11.97	17.8	1.06 All controls (K2, K5, K6, K7, K8, K9, K10, K11 and K12) required
Truck loading and unloading	4.95	11.97	1.78	N/A

These limitations are based upon the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour and  
 P = process weight rate in tons per hour

326 IAC 8-1-6 (New facilities; General reduction requirements)

The castings shakeout and degating operation has potential VOC emissions greater than twenty-five (25) tons per year. In order to comply with 326 IAC 2-8, FESOP, the metal throughput at this source is limited to 33,394 pounds per twelve (12) consecutive month period. That in combination with a VOC limit of 1.20 pounds per ton of metal produced will limit VOC emissions to less than twenty-five (25) tons per year from the shakeout and degating operations. This limitation is equivalent to the FIRE 6.23 emission factor for this process. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

#### 326 IAC 8-3 (Organic Solvent Degreasing Operations)

The two (2) insignificant degreasers were constructed in 1970 in LaPorte County. Therefore, the requirements of 326 IAC 8-3 are not applicable.

#### 326 IAC 8-4-2 (Petroleum Liquid Storage Facilities)

The insignificant petroleum liquid storage facilities at this source have capacities less than 39,000 gallons. Therefore, the requirements of 326 IAC 8-4-2 are not applicable.

#### 326 IAC 8-4-6 (Gasoline Dispensing Facilities)

Pursuant to 326 IAC 8-4-6(a)(8), "Gasoline dispensing facility" means any facility where gasoline is dispensed into motor vehicle fuel tanks or portable containers from a storage tank with a capacity of two thousand one hundred seventy-six (2,176) liters (five hundred seventy-five (575) gallons) or more. Diesel fuel and kerosene are not considered to be motor vehicle fuels. The gasoline dispensing facility has a storage tote with a capacity less than 575 gallons. The other dispensing facility dispenses diesel or kerosene fuel. Therefore, the requirements of 326 IAC 8-4-6 are not applicable.

#### 326 IAC 9-1 (Carbon Monoxide Emission Rules)

There is no CO emission limitation established by 326 IAC 2 for this source. Therefore, pursuant to 326 IAC 9-1-1, the requirements of 326 IAC 9-1 are not applicable.

#### 316 IAC 11-1 (Existing Foundries)

This source does not have a cupola. Therefore, the requirements of 326 IAC 11-1 are not applicable.

#### 326 IAC 12-1 (New Source Performance Standards)

The insignificant storage vessels each have a capacity less than forty (40) cubic meters. Therefore, the requirements of 326 IAC 12-1 are not applicable to the tanks.

### Testing Requirements

The applicant conducted tests to support the use of alternate emission factors for the particulate emissions from the pouring and casting operations (7/29/03), particulate emissions from the castings shakeout and degating (9/11/02), and Benzene, Hydrogen Cyanide, Phenol and Toluene from the pouring, cooling and shakeout based on the binder system used (10/14/04). Manufacturers tests were used to develop the VOC emission factor for precoated sand in the core making and mold making processes. The following tests will be required by the permit:

- (a) Tests of the emissions from the sand handling process, controlled by the dust collector and bin vent filters. The tests shall be performed on the emissions from the dust collector.
- (b) Tests of the emissions from the shotblasting, with the integral dust collector.

## **Air Quality Impacts from Minor Sources**

### **Modeling Overview**

Pursuant to 326 IAC 2-1.1-5, IDEM, OAQ, has conducted a modeling analysis of the Limited Potential to Emit (PTE) criteria pollutants from this proposed modification to estimate whether the Limited PTE criteria pollutants will cause or contribute to a violation of any National Ambient Air Quality Standard (NAAQS).

### **Modeling Results – Criteria Pollutants**

The modeling results indicate that the Limited PTE criteria pollutants from this modification will not exceed the National Ambient Air Quality Standards (NAAQS).

## **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 in 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:

- (a) The shotblast machine has applicable compliance monitoring conditions as specified below:
  - (1) Visible emission notations of the shotblast machine exhaust 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.
  - (2) The Permittee shall record the total static pressure drop across the dust collector used in conjunction with the shoblast machine, at least once per day when the

process is in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range of 1.0 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 or Exceedances, shall be considered a deviation from this permit. 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 shall be calibrated at least once every six (6) months.

- (3) For a single compartment bag filters or cartridge dust collectors controlling emissions from a process operated continuously, failed units 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 bag filters or cartridge dust collectors 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 or Cartridge failure can be indicated by a significant drop in the 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 because the dust collector (K1) must operate properly to be considered integral to the shotblasting process.

- (b) The sand handling has applicable compliance monitoring conditions as specified below:
  - (1) Visible emission notations of the sand handling exhaust 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.
  - (2) The Permittee shall record the total static pressure drop across the dust collector used in conjunction with the sand handling operations, at least once per day when the process is in operation. When for any one reading, the pressure drop

across the dust collector is outside the normal range of 1.0 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 or Exceedances, shall be considered a deviation from this permit. 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 shall be calibrated at least once every six (6) months.

- (3) For a single compartment bag filters or cartridge dust collectors controlling emissions from a process operated continuously, failed units 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 bag filters or cartridge dust collectors 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 or Cartridge failure can be indicated by a significant drop in the 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 because the dust collector (K2) and bin vent filters must operate properly to be ensure compliance with 326 IAC 6-3-2, to ensure that this source remains a minor source pursuant to 326 IAC 2-2, PSD, and to ensure compliance with 326 IAC 2-8, FESOP.

- (c) The pouring and cooling line, cut off saw, electric induction furnaces and magnesium treatment have applicable compliance monitoring conditions as specified below:

Visible emission notations of the pouring and cooling (stacks 1 through 5, 24, and 32) exhausts, cut off saw exhaust, and electric induction furnaces exhausts and magnesium treatment exhausts 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 because the pouring and cooling operations, cut off saw, electric induction furnaces and magnesium treatment must operate properly to be ensure compliance with 326 IAC 6-3-2, to ensure that this source remains a minor source pursuant to 326 IAC 2-2, PSD, and to ensure compliance with 326 IAC 2-8, FESOP.

### **Conclusion**

The operation of this ductile iron foundry shall be subject to the conditions of the **FESOP 091-15282-00078**.

**Indiana Department of Environmental Management  
Office of Air Quality**

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

**Source Name:** Kingsbury Castings Division  
**Source Location:** 3<sup>rd</sup> Road Annex, Kingsbury, Indiana 46345  
**County:** LaPorte  
**FESOP:** F 091-15282-00078  
**SIC Code:** 3321  
**Permit Reviewer:** CarrieAnn Paukowits

On November 4, 2005, the Office of Air Quality (OAQ) had a notice published in the LaPorte Herald-Argus, LaPorte, Indiana, stating that Kingsbury Castings Division had applied for a Federally Enforceable State Operating Permit (FESOP) to operate a ductile iron foundry and an increase in the capacity of the existing foundry. The notice also stated that OAQ proposed to issue a FESOP for this operation and provided information on how the public could review the proposed FESOP 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 FESOP should be issued as proposed.

On December 2, 2005, Kathryn M. Basham, of August Mack Environmental, on behalf of the applicant, submitted comments on the proposed FESOP. The comments are as follows (The permit language, if changed, has deleted language as ~~strikeouts~~ and new language **bolded.**):

**Comment 1:**

In Section A of the permit, please revise items A.2(c), (d) and (e) as follows:

- (c) Two (2) electric induction furnaces, identified as FRN03 and FRN04, constructed in 2000, equipped with an optional fabric filter (K4) and exhausting through stack K4 and general building exhausts A and B, maximum charge rate: 4.95 tons of metal per hour, total.
- (d) Four (4) natural gas-fired ladle heaters, exhausting through the general building ventilation, heat input capacity: 2.7 million British thermal units per hour.
- (e) Magnesium treatment operations, operating since 1974, exhausting through the general building exhausts A and B, capacity: 4.95 tons of metal per hour.

**Response 1:**

Items (c), (d) and (e) of Section A.2 and the facility description box in Section D.1 have been revised as follows:

- (c) Two (2) electric induction furnaces, identified as FRN03 and FRN04, constructed in 2000, equipped with an optional fabric filter (K4) and exhausting through stack K4 and ~~the general building ventilation~~ **exhausts A and B**, maximum charge rate: 4.95 tons of metal per hour, total.
- (d) ~~Two (2)~~ **Four (4)** natural gas-fired ladle heaters, exhausting through the general building ventilation, heat input capacity: 2.7 million British thermal units per hour, **total**.
- (e) Magnesium treatment operations, operating since 1974, exhausting through ~~the general building ventilation~~ **exhausts A and B**, capacity: 4.95 tons of metal per hour.

**Comment 2:**

In Section A of the permit, several items have been listed under the insignificant activity listings that are trivial activities. We believe these items should be removed from the permit and the emission calculations. These items are as follows:

1. A.3 (c): The gasoline fuel transfer and dispensing operations are for operating a bobcat when necessary. This is a trivial activity and should not have been marked on the application. We apologize for any confusion.
2. A.3 (d): The petroleum fuel, other gasoline, dispensing facility operations is for operating outside heating when necessary for maintenance activities. Again, this is a trivial activity and should not have been marked on the application.

**Response 2:**

These fuel transfer activities are considered trivial activities according to the definition in 326 IAC 2-7-1(40) because they are not regulated by a NESHAP and potential uncontrolled emissions are equal to or less than one (1) pound per day on for any single HAP or combination of HAPs and less than one (1) pound per day of VOC (326 IAC 2-7-1(40)(A)). The potential emissions from these activities were calculated at 0.002 tons per year. Section A.3 has been revised as follows:

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) Natural gas-fired combustion sources with heat input equal to or less than ten million (10,000,000) British thermal units per hour, including thirty-six (36) space heaters with a total capacity of 15.851 million British thermal units per hour.
- (b) Combustion source flame safety purging on startup.
- ~~(c) 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. This operation was constructed in 1998, the totes have a 300-gallon capacity, the throughput is less than 10,000 gallons per month, and it is equipped with a vapor control system.~~
- ~~(d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity of less than or equal to 10,500 gallons, and dispensing less than or equal to 230,000 gallons per month. This is a diesel fuel dispensing facility, constructed in 1989, the totes have a capacity of 150 gallons, and the throughput is less than 10,000 gallons per month.~~
- ~~(e)~~(c) 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 oil, hydraulic oils, machining oils, and machining fluids.
- ~~(f)~~(d) Refractory storage not requiring air pollution control equipment.

- ~~(g)~~(e) Machining where an aqueous cutting coolant continuously floods the machining interface.
- ~~(h)~~(f) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, including two (2) cold cleaner degreasers, constructed in 1970, using less than five percent (5%) halogenated solvents by weight.
- ~~(i)~~(g) Cleaners and solvents characterized as follows:
  - (1) having a vapor pressure equal to or less than 2 kiloPascals; 15 millimeters of mercury; or 0.3 pounds per square inch measured at 38°C (100°F); or
  - (2) having a vapor pressure equal to or less than 0.7 kiloPascals; 5 millimeters of mercury; or 0.1 pounds per square inch measured at 20°C (68°F); the use of which for all cleaners and solvents combined does not exceed 145 gallons per 12 months.
- ~~(j)~~(h) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.
- ~~(k)~~(i) Closed loop heating and cooling systems.
- ~~(l)~~(j) Solvent recycling systems with batch capacity less than or equal to 100 gallons.
- ~~(m)~~(k) Any operation using aqueous solutions containing less than 1 percent by weight of VOCs excluding HAPs.
- ~~(n)~~(l) Noncontact cooling tower systems with either of the following:
  - Forced and induced draft cooling tower system not regulated under a NESHAP.
- ~~(o)~~(m) Heat exchanger cleaning and repair.
- ~~(p)~~(n) Paved and unpaved roads and parking lots with public access.
- ~~(q)~~(o) Underground conveyors.
- ~~(r)~~(p) Asbestos abatement projects regulated by 326 IAC 14-10.
- ~~(s)~~(q) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.
- ~~(t)~~(r) Mold release agents using low volatile products (vapor pressure less than or equal to 2 kilopascals measured at 38°C).
- ~~(u)~~(s) A laboratory as defined in 326 IAC 2-7-1(21)(D).
- ~~(v)~~(t) Farm operations.
- ~~(w)~~(u) One (1) sand pile, maximum input: 15,242 tons of loose sand per year.

**Comment 3:**

The following item in Section D.1 needs to be corrected:

D.1.4: The metal throughput at the shakeout and degating process shall not exceed 33,394 tons per twelve (12) consecutive month period.

**Response 3:**

Condition D.1.4 was incorrect in the proposed permit. That condition has been revised as follows:

**D.1.4 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]**

The metal throughput at the shakeout and degating process shall not exceed 33,394 ~~pounds~~ **tons** per twelve (12) consecutive month period, with compliance determined at the end of each month, and the VOC emissions from the shakeout and degating shall not exceed 1.20 pounds per ton of metal produced. This will limit the potential VOC emissions to less than twenty-five (25) tons per year from the shakeout and degating operations. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

**Comment 4:**

The following item in Section D.1 needs to be corrected:

D.1.6: Please revise the allowable emissions for the pouring and cooling and shakeout and degating processes to be 19.05 pounds per hour.

**Response 4:**

Condition D.1.6 has been revised as follows:

**D.1.6 Particulate Matter (PM) [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from facilities at this source shall be limited as follows:

Facility/Process	Process weight rate (tons/hr)	Allowable Emissions (lbs/hr)
Scrap and Charge Handling including Scrap Charge Preheater (HEAT2)	4.95	11.97
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	4.95	11.97
Magnesium treatment	4.95	11.97
Pouring and cooling (Power & Free and TURN3) (Total emission limit for both pouring and cooling)	9.90 (metal and sand)	19.05
Shakeout and degating	9.90 (metal and sand)	19.05
Sand handling	4.95	11.97
Truck loading and unloading	4.95	11.97

These limitations are based upon the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

**Comment 5:**

The following items in Section D.1 need to be corrected:

1. D.1.9 (a): Please include reference to testing only the outlet of collector K2.
2. D.1.9 (b): Please include reference to testing only the outlet of collector K1.

**Response 5:**

The emissions from the sand handling are controlled by one (1) dust collector, identified as K2, and eight (8) bin vent filters, identified as K5, K6, K7, K8, K9, K10, K11 and K12. The air flow rate through the bin vents is sixteen (16) cubic feet per minute (cfm), each, and there are no stacks on the bin vents for performing compliance stack tests. The air flow rate through the dust collector is ninety-nine percent (99%) greater than the flow rate through the bin vent filters. Therefore, testing is only required at the outlet of the one (1) dust collector, identified as K2.

The only exhaust point for the shotblaster is the outlet of the integral dust collector, identified as K1.

Therefore, Condition D.1.9 has been revised as follows:

D.1.9 Testing Requirements [326 IAC 2-8-5(a)(1), (4)] [326 IAC 2-1.1-11]

- (a) Within 36 months after issuance of this FESOP, in order to demonstrate compliance with Conditions D.1.5 and D.1.6, the Permittee shall perform PM and PM<sub>10</sub> testing for the sand handling **emissions at the outlet of the dust collector (K2)** utilizing 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. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. Testing shall be conducted in accordance with Section C- Performance Testing.
- (b) Within 36 months after issuance of this FESOP, in order to demonstrate compliance with Condition D.1.5, the Permittee shall perform PM and PM<sub>10</sub> testing for the shotblaster **emissions at the outlet of the dust collector (K1)** utilizing 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. PM<sub>10</sub> includes filterable and condensable PM<sub>10</sub>. Testing shall be conducted in accordance with Section C- Performance Testing.

**Comment 6:**

The following items in Section D.1 need to be corrected:

D.1.10: Visible emission notations should only be required for those collected units exhausting to the atmosphere through a dedicated exhaust stack. Please note that visible emission notations are not required for those units which exhaust inside the building but may eventually exhaust through general building exhaust fans/vents. In addition, visible emission notations should not be required for the bin

vents utilized in the sand handling operations. Please clarify that, as currently configured, visible emission notations are not required.

D.1.13 (c): Please revise this section to reflect our comments above.

**Response 6:**

Pursuant to Condition D.1.10, visible emission notations of the pouring and cooling operations (stacks 1 through 5, 24, and 32), shotblast machine, cut off saw, electric induction furnaces, magnesium treatment and sand handling exhausts shall be performed once per day during normal daylight operations only when exhausting to the atmosphere. Emissions to the atmosphere may be through a stack or vent. There are no changes to the permit resulting from these comments.

**Comment 7:**

The following items in Section D.1 need to be corrected:

1. D.1.11 (a): Please include reference to monitoring the pressure drop across the collector K1.
2. D.1.11 (b): Please include reference to monitoring the pressure drop across the collector K2.

**Response 7:**

Condition D.1.11 has been revised as follows:

**D.1.11 Parametric Monitoring**

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- (a) The Permittee shall record the total static pressure drop across the dust collector (**K1**) used in conjunction with the shotblast machine, at least once per day when the process is in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range of 1.0 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 or Exceedances, shall be considered a deviation from this permit.
- (b) The Permittee shall record the total static pressure drop across the dust collector (**K2**) used in conjunction with the sand handling operations, at least once per day when the process is in operation. When for any one reading, the pressure drop across the dust collector is outside the normal range of 1.0 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 or Exceedances, shall be considered a deviation from this permit.

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 shall be calibrated at least once every six (6) months.

**Comment 8:**

In the TSD portion of the permit, please make the following changes as well as the changes in Comments 1 and 2 above:

1. Please revise per the same changes as in Comment #1.
2. On page 8 of 20, Naphthalene was misspelled. Please revise.
3. On page 8 of 20, the potential lead emissions generated from the melting operations should read as 0.0004 tons per year.
4. On page 8 of 20, the potential lead emissions generated from the magnesium treatment should read as 0.709 tons per year.
5. On page 9 of 20, the potential emissions for pouring and cooling should read as follows:
  - 2.34 tons per year of VOC
  - 0.0007 tons per year of lead
  - 0.44 tons per year of individual HAP
  - 1.39 tons per year of total HAPs
6. On page 9 of 20, the potential lead emissions generated from the shot blaster operations should read as 0.00001 tons per year.
7. On page 9 of 20, the potential PM and PM<sub>10</sub> emissions generated from the sand handling operations should read as 3.58 and 0.536 tons per year, respectively.
8. On page 9 of 20, the potential PM<sub>10</sub> emissions generated from the truck loading and unloading should read as 2.85 tons per year.
9. On page 9 of 20, the potential individual and total HAP emissions generated from the core and mold making should read as 3.41 and 3.41 tons per year, respectively.
10. On page 9 of 20, the potential emission generated from the trivial activities, as mentioned in comment #2 above, should not be included since the potential to emit is less than one pound per day of VOCs.
11. On page 9 of 20, the total emissions generated from this table should be updated.
12. On page 11 of 20, under the Federal Rule Applicability section, please change the phrase "are not included in the permit" to "are not applicable to the facility" in (a), (b), (c) and (d).
13. On page 11 of 20, please refer to the fuel storage containers as totes versus tanks. In addition, please note that the operations are trivial activities per comment #2 above.
14. On page 12 of 20, please update the table listed under 326 IAC 2-2 to incorporate the correct values for sand handling and truck loading and unloading. The total emissions will need to be adjusted accordingly.
15. On page 15 of 20, please update the allowable emissions listed for pouring and cooling and shakeout and degating according to comment #3.

- On page 16 of 20, please remove the petroleum liquid storage and gasoline dispensing facilities from this section per comment #3 above.

**Response 8:**

IDEM, OAQ, prefers that the TSD remain as it appeared during public notice. Changes to the technical information are documented in this addendum to the TSD. Responses to the specific comments are:

- The TSD will not be changed. Those changes to the permit are documented in Response 1.
- The correct spelling is Naphthalene.
- 3-11. The potential to emit HAPs from the pouring and cooling include the potential to emit HAPs on pages 1 and 2, as well as page 4 of Appendix A to the TSD. Those values are correct in the table. According to the limitations in Condition D.1.5 of the permit, the potential to emit PM and PM<sub>10</sub> from the sand handling and PM<sub>10</sub> from the truck unloading is correct in the table in the TSD. The potential to emit HAPs from the core and mold making is also correct in this table. Removal of the trivial activities causes a negligible change in the potential to emit. All other suggested changes are correct. The values for Lead in the table were the unrestricted potential emissions. The revised values are the potential to emit based upon the throughput limitations in the permit. There was an error in the calculation for the potential to emit VOC from the pouring and cooling, which has been corrected in this table, as suggested. The corrected Potential to Emit table is as follows:

Process/emission unit	Potential To Emit (tons/year)							
	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Lead	HAPs
Scrap and Charge Handling	10.0	6.01	-	-	-	-	0.0003	0.154 individual 0.401 total
Melting (Two (2) electric induction furnaces (FRN03 and FRN04))	15.0	14.4	-	-	-	-	<del>0.0005</del> <b>0.0004</b>	0.231 individual 0.601 total
Magnesium treatment	30.1	30.1	-	0.083	-	-	<del>0.924</del> <b>0.709</b>	0.709 individual 0.709 total
Pouring and Cooling (Power & Free and TURN3) (Total emission limit for both pouring and cooling)	26.7	31.7	0.334	<del>2.24</del> <b>2.34</b>	-	0.167	<del>0.0008</del> <b>0.0007</b>	1.39 individual 9.07 total
Shakeout and degating	1.67	1.67	-	20.0	-	-		
Shotblaster	0.312	0.031	-	-	-	-	<del>0.008</del> <b>0.00001</b>	0.005 individual 0.012 total
Cutoff saw (SAW03)	0.167	0.075	-	-	-	-	-	-

Process/emission unit	Potential To Emit (tons/year)							
	PM	PM <sub>10</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	Lead	HAPs
Sand handling	3.57	0.534	-	-	-	-	-	-
Truck loading and unloading	6.01	2.84	-	-	-	-	-	-
Core and Mold Making	-	-	-	4.74	-	-	-	3.40 individual 3.40 total
Combustion and Insignificant Activities	6.34	4.11	0.114	2.01	16.0	19.2	0.001	1.16 individual 1.55 total
Total Emissions	99.8	91.5	0.448	<del>29.4</del> <b>29.2</b>	16.0	19.4	<del>0.932</del> <b>0.711</b>	3.41 individual 15.7 total

12. The applicability of state and federal rules presented in the Technical Support Document is based on the information provided in the FESOP application and contained in IDEM's files. This information was not comprehensive enough to provide a nonapplicability determination in the TSD.
13. This has been noted and documented in Response 2.
14. The potential to emit of those units are correct in the TSD.
15. This has been noted and documented in Response 4.
16. This has been noted and documented in Response 2.

**Comment 9:**

The IDEM has chosen to incorporate two emission factors from a 1970s publication regarding shell core binder operations. These two constituents are total aromatic amines and total C2 to C5 aldehydes. We do not believe that these two constituents should be considered HAP emissions since no CAS number has been assigned to these variables in order to determine whether these are actually included in the table listing the 189 classified HAPs. Without an assigned CAS number, verification that these two groups of compounds are HAPs is impossible.

**Response 9:**

IDEM used the emission factors in question to determine HAP emissions. While the said factors do not have CAS numbers, the factors include many HAP categories. IDEM has taken a conservative approach in assuming all of the compounds in the factors are HAPs. If the Permittee wishes to refine the emission factors, the Permittee should contact the Compliance Data Section. However the source is a natural area source of HAPs. The permit does not contain any limits based on these factors.

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Plt ID: 091-00078  
Reviewer: CarrieAnn Paukowits  
Date: January 31, 2002

\*\* Process Emissions \*\*

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Etc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Scrap and Charge Handling - Includes process emissions from the Scrap Charge Preheater Source of Criteria Pollutant Factors: SCC# 3-04-003-15 FIRE 6.23 AP-42 Ch. 12.10 Fifth edition 1995 HAPs based on lab analysis	43362	PM	0.60	2.97	13.0	none		2.97	13.0
		PM-10	0.36	1.78	7.81	none		1.78	7.81
		SO2	0.00	0.00	0.00			0.00	0.00
		NOx	0.00	0.00	0.00			0.00	0.00
		VOC	0.00	0.00	0.00			0.00	0.00
		CO	0.00	0.00	0.00			0.00	0.00
		chromium	7.7E-03	3.8E-02	1.7E-01	none		3.8E-02	1.7E-01
		manganese	9.2E-03	4.6E-02	2.0E-01	none		4.6E-02	2.0E-01
		nickel	7.1E-03	3.5E-02	1.5E-01	none		3.5E-02	1.5E-01
		Lead	1.4E-05	6.8E-05	3.0E-04	none		6.8E-05	3.0E-04

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Etc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Melting - Electric Induction Furnace Source of Criteria Pollutant Factors: EPA SCC# 3-04-003-03 FIRE 6.23 AP-42 Ch. 12.10 Fifth edition 1995 HAPs based on lab analysis	43362	PM	0.90	4.46	19.5	none		4.46	19.5
		PM-10	0.86	4.26	18.6	none		4.26	18.6
		SO2	0.00	0.00	0.00			0.00	0.00
		NOx	0.00	0.00	0.00			0.00	0.00
		VOC	0.00	0.00	0.00			0.00	0.00
		CO	0.00	0.00	0.00			0.00	0.00
		chromium	1.2E-02	5.7E-02	2.5E-01	none		5.7E-02	2.5E-01
		manganese	1.4E-02	6.9E-02	3.0E-01	none		6.9E-02	3.0E-01
		nickel	1.1E-02	5.3E-02	2.3E-01	none		5.3E-02	2.3E-01
		Lead	2.1E-05	1.0E-04	4.5E-04	none		1.0E-04	4.5E-04

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Etc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Pouring/Casting Source of Criteria Pollutant Factors: FIRE 5.0 FIRE 5.0 FIRE 5.0 SCC# 3-04-003-18  **Factors based on 7/29/03 test, validated 11/3/03, 0.162 lb/ton PM & 0.449 lb/ton PM-10, rounded up to the next tenth for safety. HAPs based on lab analysis:	43362	PM**	0.20	0.99	4.34	none		0.99	4.34
		PM-10**	0.50	2.48	10.8	none		2.48	10.8
		SO2	0.02	0.099	0.434	none		0.099	0.434
		NOx	0.01	0.050	0.217	none		0.050	0.217
		VOC	0.14	0.693	3.04	none		0.693	3.04
		CO	---	0.00	0.00			0.00	0.00
		chromium	2.6E-03	1.3E-02	5.6E-02	none		1.3E-02	5.6E-02
		manganese	3.1E-03	1.5E-02	6.7E-02	none		1.5E-02	6.7E-02
		nickel	2.4E-03	1.2E-02	5.1E-02	none		1.2E-02	5.1E-02
		Lead	4.6E-06	2.3E-05	9.9E-05	none		2.3E-05	9.9E-05

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Pit ID: 091-00078  
Reviewer: CarrieAnn Paukowits  
Date: January 31, 2002

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Ebc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Castings Cooling <i>Source of Criteria</i> <i>Pollutant Factors:</i> FIRE 6.23 SCC# 3-04-003-25  HAPs based on lab analysis	43362	PM	1.40	6.93	30.4	none		6.93	30.4
		PM-10	1.40	6.93	30.4	none		6.93	30.4
		SO2	0.00	0.00	0.00			0.00	0.00
		NOx	0.00	0.00	0.00			0.00	0.00
		VOC	0.00	0.00	0.00			0.00	0.00
		CO	---	0.00	0.00			0.00	0.00
		chromium	1.8E-02	8.9E-02	3.9E-01	none		8.9E-02	0.392
		manganese	2.2E-02	1.1E-01	4.7E-01	none		1.1E-01	0.467
		nickel	1.7E-02	8.2E-02	3.6E-01	none		8.2E-02	0.358
		Lead	3.2E-05	1.6E-04	7.0E-04	none		1.6E-04	0.001

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Ebc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Castings Shakeout and degating  <i>Source of Criteria</i> <i>Pollutant Factors:</i> FIRE 6.23 SCC# 3-04-003-31 AP-42 Ch. 12.10, Fifth edition 1995 HAPs based on lab analysis  **Factors based on 9/11/02 test, validated 12/19/02, 0.027 lb/ton PM & 0.081 lb/ton PM-10, rounded up to the next tenth	43362	PM*	0.10	0.495	2.17	none		0.495	2.17
		PM-10*	0.10	0.495	2.17	none		0.495	2.17
		SO2	0.00	0.00	0.00	none		0.00	0.00
		NOx	0.00	0.00	0.00	none		0.00	0.00
		VOC	1.20	5.94	26.0	none		5.94	26.0
		CO	---	0.00	0.00	none		0.00	0.00
		chromium	1.3E-03	6.4E-03	2.8E-02	none		6.4E-03	2.8E-02
		manganese	1.5E-03	7.6E-03	3.3E-02	none		7.6E-03	3.3E-02
		nickel	1.2E-03	5.8E-03	2.6E-02	none		5.8E-03	2.6E-02
		Lead	2.3E-06	1.1E-05	5.0E-05	none		1.1E-05	5.0E-05

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Ebc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Castings Cleaning and Finishing (Shotblaster) <i>Source of Criteria</i> <i>Pollutant Factors:</i> FIRE 6.23 SCC# 3-04-003-40 AP-42 Ch. 12.10 Fifth edition 1995 HAPs based on lab analysis	43362	PM	17.00	84.15	369	fabric filter	99.89%	0.093	0.405
		PM-10	1.70	8.42	36.9	fabric filter	99.89%	0.009	0.041
		SO2	0.00	0.00	0.00			0.00	0.00
		NOx	0.00	0.00	0.00			0.00	0.00
		VOC	0.00	0.00	0.00			0.00	0.00
		CO	0.00	0.00	0.00			0.00	0.00
		chromium	2.2E-01	1.1E+00	4.8E+00	fabric filter	99.89%	1.2E-03	5.2E-03
		manganese	2.6E-01	1.3E+00	5.7E+00	fabric filter	99.89%	1.4E-03	6.2E-03
		nickel	2.0E-01	9.9E-01	4.3E+00	fabric filter	99.89%	1.1E-03	4.8E-03
		Lead	3.9E-04	1.9E-03	8.4E-03	fabric filter	99.89%	2.1E-06	9.3E-06

The dust collector is considered integral to the process. Therefore, the unrestricted potential emissions are equal to the potential to emit after control.  
The control efficiency is guaranteed by the vendor.

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Pit ID: 091-00078  
Reviewer: CarrieAnn Paukowits  
Date: January 31, 2002

Process:	Rate (tons sand/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Ebc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Sand Handling Source of Criteria Pollutant Factors: FIRE 6.23 EPA SCC# 3-04-003-50	43362	PM	3.6	17.8	78.1	fabric filter	94.05%	1.06	4.64
		PM-10	0.54	2.67	11.7	fabric filter	94.05%	0.159	0.697

Process:	Rate (tons iron/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Ebc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Magnesium Treatment Source of Criteria Pollutant Factors: FIRE 6.23 SCC# 3-04-003-21 AP-42 Ch 12.10 Fifth edition 1995	43362	PM	1.80	8.91	39.0	none		8.91	39.0
		PM-10	1.80	8.91	39.0	none		8.91	39.0
		SO2	0.00	0.00	0.00			0.00	0.00
		NOx	0.00	0.00	0.00			0.00	0.00
		VOC	0.01	0.02	0.108			0.025	0.108
		CO	0.00	0.00	0.00			0.00	0.00
Lead	0.04	0.210	0.921			0.210	0.921		

Process:	Rate (tons metal/yr)	Pollutant	Ef (lb/ton produced)	Ebc (lbs/hr)	Ebc (ton/yr)	Type of control	Control Efficiency (%)	Eac (lbs/hr)	Eac (ton/yr)
Cut off saw Source of Criteria Pollutant Factors: FIRE 6.23 EPA SCC# 3-04-003-60	43362	PM	0.01	0.050	0.217	none	0.00%	0.050	0.217
		PM-10	0.0045	0.022	0.098	none	0.00%	0.022	0.098

**Truck Loading and Unloading**

Emission Factor (lb/ton) =  $k \times 0.0032 \times ((U/5)^{1.3}) / (M/2)^{1.4}$   
 M (moisture content) 7.4%  
 U (mean wind speed) 6.85  
 k (Particle size multiplier) 0.74 PM  
 0.35 PM10  
 PM Emission Factor (lb/ton) = 0.36  
 PM10 Emission Factor (lb/ton) = 0.17

	Capacity (tons sand/hr)	PM Emissions (lbs/hr)	PM10 Emissions (lbs/hr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)
Truck Loading/Unloading	4.95	1.78	0.843	7.81	3.69
<b>Total</b>				<b>7.81</b>	<b>3.69</b>

**Methodology:**

Ef = Emission factor  
 Ebc = Potential Emissions before controls = Rate (units/yr) x Ef(lbs/unit) / 2000 lbs/hr  
 Eac = Potential Emissions after controls = (1-efficiency/100) x Ebc  
 1 lb = 2000 tons

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Pit ID: 091-00078  
Reviewer: CarrieAnn Paukowits  
Date: January 31, 2002

**Shell Core and Mold Making Machines**

**VOC Emissions from Mold Glue**

Machine	Date of Construction	Capacity (tons sand/hr)	Glue Usage Rate (lbs glue/ton sand)	Worst Case Weight % VOC	Flash Off Factor	Potential VOC Emissions from Glue Evaporation (lbs/hr)	Potential VOC Emissions from Glue Evaporation (tons/yr)	Worst Case Weight % Phenol	Potential Phenol Emissions from Glue Evaporation (lbs/hr)	Potential Phenol Emissions from Glue Evaporation (tons/yr)
COR01 - COR12 and MOL01 - MOL20	Varies	4.95	6.80	3.00%	100%	1.01	4.42	3.00%	1.01	4.42

**Methodology**

Potential VOC Emissions from Mold Glue (tons/yr) = Capacity (tons sand/hr) x Glue Usage Rate (lbs glue/ton sand) x Weight % VOC in Glue x Flash Off Factor x 8,760 hrs/yr / 2,000 lbs/ton  
The 100% Flash Off Factor is conservative because it assumes all VOC from resin is emitted here, rather than some at pouring and shakeout.

The phenol emissions are over conservation since 100% of phenol is assumed to evaporate at the molding and core making. The worst case between this value and the value calculated for pouring, cooling and shakeout will be used in the totals on pages 8 and 9.

**VOC Emissions from Precoated Sand**

Machine	Date of Construction	Capacity (tons sand/hr)	Weight Loss Due to VOC Emissions (%)	Potential VOC Emissions from Resin Evaporation (tons/yr)	Potential VOC Emissions from Resin Evaporation (tons/yr)
COR01 - COR12 and MOL01 - MOL20	Varies	4.95	0.004%	0.0002	1.73

**Methodology**

Potential VOC Emissions from Resin Evaporation (tons/yr) = Capacity (tons sand/hr) x Weight Loss Due to VOC Emissions x 8,760 hrs/yr

Weight loss was determined by manufacturer's tests of the weight loss due to heating pre-coated sand. Emission factor was approved by IDEM, OAQ, on 10/6/05.

There is no VOC catalyst used.

**HAPs Emissions from Pouring, Cooling and Shakeout based on Binder System**

Pollutant	Emission Factors => Lbs. of Chemical Released to Air per Lbs. of Index	
	Shell (Resin)	Shell
Acrolein	0.00047	194
Benzene*	0.00000888	3.66
Formaldehyde	0.00035	144
Hydrogen Cyanide*	0.00088	3625
M-Xylene	0.000585	2410
Napthalene	0.00058	239
O-Xylene	0.000117	482
Phenol*	0.000359	1479
Toluene*	0.0000113	4.65
Total Aromatic Amines	0.002339	9635
Total C2 to C5 Aldehydes	0.000585	2410
Total HAPs		20626

**METHODOLOGY**

Emission rate (tons/yr) = Annual Usage (lbs/yr) \* Emission Factor (lbs Chemical/lbs Index) \* 1 ton/2000 lbs

The index material is the resin

\*Emission factors for Hydrogen Cyanide, Phenol, Toluene and Benzene are alternate emission factors approved by IDEM, OAQ, based on tests conducted at the source on 10/14/04.

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Pit ID: 091-00078  
Reviewer: CarrieAnn Paukowits  
Date: January 31, 2002

**All Combustion**

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	1.90	7.60	0.600	100	5.50	84.0
				**see below		

\*PM emission factor is filterable PM only. PM-10 emission factor is filterable and condensable PM-10 combined.  
\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Equipment	Heat Input Capacity MMBtu/hr	Potential Throughput MMCF/yr	Potential Emission in tons/yr					
			PM*	PM10*	SO2	NOx	VOC	CO
Scrap charge preheater	2.20	19.3	0.018	0.073	0.006	0.964	0.053	0.809
Ladle Heaters	2.70	23.7	0.022	0.090	0.007	1.183	0.066	0.993
Shell molding machines (MOL01-MOL20)	20.00	175.2	0.166	0.666	0.053	8.760	0.482	7.358
Shell core machines (COR01 - COR12)	2.63	23.0	0.022	0.087	0.007	1.150	0.063	0.966
Space Heaters	15.85	138.9	0.132	0.528	0.042	6.943	0.382	5.832
<b>Total</b>	<b>27.53</b>	<b>241</b>	<b>0.361</b>	<b>1.44</b>	<b>0.114</b>	<b>19.0</b>	<b>1.04</b>	<b>16.0</b>

**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
	0.0021	0.0012	0.0750	1.8000	0.0034
Potential Emission in tons/yr	0.0003	0.0001	0.009	0.217	0.0004

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead	Cadmium	Chromium	Manganese	Nickel	Total HAPs
	0.0005	0.0011	0.0014	0.0004	0.0021	
Potential Emission in tons/yr	0.0001	0.0001	0.0002	0.0005	0.0003	<b>0.228</b>

**Methodology**

All emission factors are based on normal firing.  
MMBtu = 1,000,000 Btu  
MMCF = 1,000,000 Cubic Feet of Gas  
Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu  
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)  
Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton  
The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations**  
**Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
 Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
 FESOP: 091-15282  
 Pit ID: 091-00078  
 Reviewer: CarrieAnn Paukowitz  
 Date: January 31, 2002

**Insignificant Activities**

Fugitive Source	Gasoline				Diesel				Total Emissions (tons/yr)
	Emission Factor (lbs/1000gal)	Annual Throughput (gallons)	VOC Emissions (lbs/yr)	VOC Emissions (tons/yr)	Emission Factor (lbs/1000gal)	Annual Throughput (gallons)	VOC Emissions (lbs/yr)	VOC Emissions (tons/yr)	
Fuel containers*	5.0	600	3.00	0.002	0.014	480	0.007	0.000003	0.002

\*= potential throughput

**Methodology**  
 VOC emission factors from AP-42, Chapter 5

**Degreasing**

Number of Degreasers = 2  
 Maximum annual capacity = 145 gallons/year each  
 Worst-case VOC = 100 percent  
 Total HAPs = 0.2 percent (tetrachloroethene)  
 Density = 6.7 lbs/gal

VOC Emissions = (Number of Degreasers)\*(Maximum Annual Capacity)\*(Percent VOC)\*(Density of Solvent)\*(1 ton/2,000 pounds)  
 VOC Emissions = (2)\*(145 gallons/year)\*(1.0)\*(Density of Solvent)\*(1 ton/2,000 lbs)

**VOC Emissions = 0.972 tons/year**

HAP Emissions = (Number of Degreasers)\*(Maximum Annual Capacity)\*(Percent HAP)\*(Density of Solvent)\*(1 ton/2,000 pounds)

HAP Emissions = (2)\*(145 gallons/year)\*(0.002)\*(Density of Solvent)\*(1 ton/2,000 lbs)

**HAP Emissions = 0.002 tons/year**

**SMAW Welding**

Maximum Rod Usage (lbs/yr)	Emission Factor (lb PM/lb Rod)	Emission Factor (lb total HAPs/lb Rod)	Emission Factor (lb Cr/lb Rod)	Emission Factor (lb Co/lb Rod)	Emission Factor (lb Mn/lb Rod)	Emission Factor (lb Ni/lb Rod)	Emission Factor (lb Pb/lb Rod)
10000	0.082	0.026	0.001	0.000001	0.023	0.0017	0.00016
Potential PM/PM10 Emissions (tons/yr)	Potential HAPs Emissions (tons/yr)	Potential Chromium Emissions (tons/yr)	Potential Cobalt Emissions (tons/yr)	Potential Manganese Emissions (tons/yr)	Potential Nickel Emissions (tons/yr)	Potential Lead Emissions (tons/yr)	
0.408	0.13	0.007	0.000005	0.116	0.009	0.001	

Emission factors are the worst case SMAW emission factors from AP-42, Section 12.19 for each pollutant.

**Sand Storage Piles**

Emission Factor (lb/ton) =  $k \times 0.0032 \times ((U/5)^{1.3}) / ((M/2)^{1.4})$   
 M (moisture content) = 7.4%  
 U (mean wind speed) = 8.85  
 k (Particle size multiplier) = 0.74 PM

PM Emission Factor (lb/ton) = 0.35 PM10  
 PM10 Emission Factor (lb/ton) = 0.17

Capacity (tons sand/yr)	PM Emissions (tons/yr)	PM10 Emissions (tons/yr)
Sand Storage Piles	15242	2.75
<b>Total</b>	<b>2.75</b>	<b>1.30</b>

**Methodology:**

Ef = Emission factor  
 Ebc = Potential Emissions before controls = Rate (units/yr) x Ef(lbs/unit) / 2000 lbs/hr  
 Eac = Potential Emissions after controls = (1-efficiency/100) x Ebc  
 1 lb = 2000 tons

**Wet Cooling Towers**

Capacity (gal/m)	Capacity (gal/yr)	Emission Factor (lb/1,000 gal)	PM10 Emissions (tons/yr)
65	34164000	0.019	0.325

**Methodology**

Emission factor from AP-42, Table 13.4-1  
 PM10 Emissions (tons/yr) = Capacity (gal/min) x 60 min/hr x 8,760 hrs/yr x Emission factor x 1 lb/2,000 tons

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Pit ID: 091-00078  
Reviewer: CarrieAnn Paukowitz  
Date: January 31, 2002

**Insignificant Activities, continued**

The following calculations determine the amount of emissions created by unpaved roads, based on AP-42, Ch 13.2.2 (12/2003)

**\*\* unpaved roads \*\***

391 miles per year

**PM**

**Method 1a:**

$$E_f = k \left[ \frac{s}{12} \right]^{0.9} \left[ \frac{W}{3} \right]^b$$

= 6.44 lb/mile

where k = 4.9 (particle size multiplier for PM)  
s = 6 mean % silt content of unpaved roads  
b = 0.45 Constant for PM-10 and PM-30 or TSP  
W = 22 tons average vehicle weight  
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$E = \frac{6.44 \text{ lb/mi} \times 391 \text{ mi/yr}}{2000 \text{ lb/ton}} = 1.26 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{ext} = E \cdot \left[ \frac{365-p}{365} \right]$$

where p = 125 days of rain greater than or equal to 0.01 inches(see Fig. 13.2.2-1)

**0.827 tons/yr**

**PM-10**

**Method 1a:**

$$E_f = k \left[ \frac{s}{12} \right]^{0.9} \left[ \frac{W}{3} \right]^b$$

= 1.97 lb/mile

where k = 1.5 (particle size multiplier for PM-10)  
s = 6 mean % silt content of unpaved roads  
b = 0.45 Constant for PM-10 and PM-30 or TSP  
W = 22 tons average vehicle weight  
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)

$$E = \frac{1.97 \text{ lb/mi} \times 391 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.385 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{ext} = E \cdot \left[ \frac{365-p}{365} \right]$$

where p = 125 days of rain greater than or equal to 0.01 inches(see Fig. 13.2.2-1)

**0.253 tons/yr**

The following calculations determine the amount of emissions created by unpaved roads, based on AP-42, Ch 13.2.1 (12/2003)

**\*\* paved roads \*\***

9201 miles per year

**PM**

$$E_f = k \left[ \frac{sL}{2} \right]^{0.65} \left[ \frac{W}{3} \right]^b - C$$

= 0.476 lb/mile

where k = 0.082 (particle size multiplier for PM)  
sL = 9.7 silt loading of paved roads  
b = 1.5 Constant for PM-10 and PM-30 or TSP  
W = 4.89 tons average vehicle weight  
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)  
C = 0.00047 Emission factor for 1980s vehicle fleet exhaust, break wear and tire wear

$$E = \frac{0.476 \text{ lb/mi} \times 9201 \text{ mi/yr}}{2000 \text{ lb/ton}} = 2.19 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{ext} = E \cdot \left[ \frac{365-p}{365} \right]$$

where p = 125 days of rain greater than or equal to 0.01 inches(see Fig. 13.2.2-1)

**2.00 tons/yr**

**PM-10**

$$E_f = k \left[ \frac{sL}{2} \right]^{0.65} \left[ \frac{W}{3} \right]^b - C$$

= 0.092 lb/mile

where k = 0.016 (particle size multiplier for PM-10)  
sL = 9.7 silt loading of paved roads  
b = 1.5 Constant for PM-10 and PM-30 or TSP  
W = 4.89 tons average vehicle weight  
M = 0.2 surface material moisture content, % (default is 0.2 for dry conditions)  
C = 0.00047 Emission factor for 1980s vehicle fleet exhaust, break wear and tire wear

$$E = \frac{0.092 \text{ lb/mi} \times 9201 \text{ mi/yr}}{2000 \text{ lb/ton}} = 0.425 \text{ tons/yr}$$

Taking natural mitigation due to precipitation into consideration:

$$E_{ext} = E \cdot \left[ \frac{365-p}{365} \right]$$

where p = 125 days of rain greater than or equal to 0.01 inches(see Fig. 13.2.2-1)

**0.389 tons/yr**

Insignificant Activity Totals (tons/yr)	
PM	5.98
PM10	2.67
VOC	0.973
Total HAPs	0.135
Tetrachloroethene	0.002
Chromium	0.007
Cobalt	0.00001
Manganese	0.116
Nickel	0.009
Lead	0.001

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
Address City IN Zip: Third Road Annex, Kingsbury, Indiana 46345  
FESOP: 091-15282  
Pit ID: 091-00078  
Reviewer: CarrieAnn Paukowitz  
Date: January 31, 2002

**Total potential emissions after modification (43,362 TPY of metal and 43,362 TPY sand) Before Limits**

	Proposed unrestricted potential emissions for facilities on pages 1-4 (tons/yr)	Proposed potential emissions for facilities on pages 1-4 after controls (tons/yr)	PTE from insignificant activities, excluding combustion, pages 6 and 7 (tons/yr)	PTE from combustion, page 5 (tons/yr)	Total proposed potential emissions before non-integral controls (tons/yr)	Total proposed potential emissions after controls (tons/yr)
PM	195	121	5.98	0.361	201	128
PM-10	124	113	2.67	1.44	128	117
SO2	0.434	0.434	negligible	0.114	0.548	0.548
NOx	0.217	0.217	negligible	19.0	19.2	19.2
VOC	35.3	35.3	0.973	1.04	37.3	37.3
CO	0.00	0.00	negligible	15.0	16.0	16.0
Total HAPs	17.7	17.7	0.13	0.228	18.1	18.1
Phenol	4.42	4.42	0.00	0.00	4.42	4.42
Chromium	90%	0.900	0.007	0.0002	0.907	0.907
Manganese	1.07	1.07	0.12	0.0000	1.19	1.19
Nickel	0.823	0.823	0.009	0.0003	0.832	0.832
Lead	0.931	0.923	0.001	0.0001	0.924	0.924
Acrolein	0.097	0.097	0.000	0.0000	0.097	0.097
Benzene	0.002	0.002	0.000	0.0003	0.002	0.002
Formaldehyde	0.072	0.072	0.000	0.0090	0.081	0.081
Hydrogen Cyanide	1.81	1.81	0.000	0.0000	1.81	1.81
Xylenes	1.45	1.45	0.000	0.0000	1.45	1.45
Naphthalene	0.119	0.119	0.000	0.0000	0.119	0.119
Toluene	0.002	0.002	0.000	0.0004	0.003	0.003
Hexane	0.000	0.000	0.000	0.2170	0.217	0.217
All other HAPs negligible						

**Current Potential to Emit (PTE) before modification**

This calculation shows that the existing source is not a major source pursuant to 326 IAC 2-2, PSD.

The current capacity is a permit limit

Current Capacity Metal (tons/hr)	Proposed Capacity Metal (tons/hr)	Percent Increase
2.82	4.95	75.53%

	Percent Change in capacity	Current potential emissions for facilities on pages 1-4 (tons/yr)	PTE from insignificant activities, excluding combustion, pages 6 and 7 (tons/yr)	PTE from combustion, page 5 (tons/yr)	Total current unrestricted potential emissions (tons/yr)	Total current PTE, excluding sand handling which is the only unit with nonintegral controls (tons/yr)	Limited PTE of sand handling based on Operation Condition 6j (lbs/hr)	Limited PTE of sand handling based on Operation Condition 6k (tons/yr)	Total Current PTE after limitations (tons/yr)
PM	75.53%	111	5.98	0.36	117	72.9	2.14	9.37	82.3
PM-10	75.53%	70.9	2.67	1.44	75.0				
SO2	75.53%	0.247	negligible	0.114	0.361				
NOx	75.53%	0.124	negligible	19.0	19.1				
VOC	75.53%	20.1	0.973	1.04	22.1				
CO	75.53%	0.00	negligible	15.96	16.0				
Total HAPs	75.53%	10.09	0.13	0.228	10.5				
Max. HAP (Phenol)	75.53%	2.52	0.00	0.00	2.52				

**Methodology**

Current potential emissions for facilities on pages 1-4 before controls (tons/yr) = New potential emissions for facilities on pages 1-4 before controls x (1/1+0.7553 (based on percent increase in capacity))

The only unit limited below its unrestricted potential emissions after the throughput limitation in the CP/OP is the sand handling, which has a nonintegral control device.

Therefore, the PTE of the source is the unrestricted potential to emit (after the throughput limitation) for all units and the limited PTE of the sand handling based on Operation Condition 6j.

Total current PTE (tons/yr) = Current potential emissions for facilities on pages 1-4 (excluding sand handling + limited PTE from sand handling + PTE from insignificant activities, excluding combustion + PTE from combustion

**Appendix A: Emission Calculations  
Grey Iron Foundry Emissions**

Company Name: Kingsbury Castings Division  
 Address City IN Zip Third Road Annex, Kingsbury, Indiana 4634  
 FESOP: 091-15282  
 Pit ID: 091-00078  
 Reviewer: CarrieAnn Paukowitz  
 Date: January 31, 2002

**After Modification**

**FESOP Limit and limit to remain a minor source pursuant to 326 IAC 2-2, and resulting emission reductions**

In order to comply with FESOP, the potential to emit PM10 must be limited to less than 100 tons per year. In order to remain a minor source pursuant to 326 IAC 2-2, PM emissions must be limited to less than 100 tons per year.

	Required PTE for FESOP (tons/yr)	PTE from combustion, pages 7 and 8 (tons/yr)	PTE from insignificant activities, excluding combustion (tons/yr)	Remaining Limited PTE for facilities on pages 1-4 to comply with FESOP (tons/yr)	Required reduction in capacity	Limited Metal Capacity (tons/year)	Limited Sand Capacity (tons/year)
PM	99.9	0.361	5.98	93.6	22.99%	33394	33394
PM10	99.9	1.44	2.67	95.8	15.51%	36636	36636

	New proposed potential emissions for facilities on pages 1-4 after controls (tons/yr)	Required reduction in capacity	Proposed PTE from facilities on pages 1-4 after controls and limitations (tons/yr)	PTE from insignificant activities, excluding combustion (tons/yr)	PTE from combustion, page 5 (tons/yr)	Total new proposed PTE after controls and limitations (tons/yr)
PM	121	22.99%	93.6	5.98	0.361	99.9
PM-10	113	22.99%	87.3	2.67	1.44	91.4
SO2	0.434	22.99%	0.334	negligible	0.114	0.448
NOx	0.217	22.99%	0.167	negligible	19.0	19.2
VOC	35	22.99%	27.2	0.973	1.04	29.2
CO	0.000	22.99%	0.000	negligible	16.0	16.0
Total HAPs	17.7	22.99%	13.6	0.13	0.228	14.0
Phenol	4.42	22.99%	3.41	0.000	0.000	3.41
Chromium	0.900	22.99%	0.693	0.007	0.000	0.700
Manganese	1.07	22.99%	0.828	0.12	0.000	0.94
Nickel	0.823	22.99%	0.634	0.009	0.000	0.643
Lead	0.923	22.99%	0.711	0.001	0.000	0.712
Acrolein	0.097	22.99%	0.075	0.000	0.000	0.075
Benzene	0.002	22.99%	0.001	0.000	0.000	0.002
Formaldehyde	0.072	22.99%	0.056	0.000	0.009	0.065
Hydrogen Cyanide	1.81	22.99%	1.40	0.000	0.000	1.40
Xylenes	1.45	22.99%	1.11	0.000	0.000	1.11
Napthalene	0.119	22.99%	0.092	0.000	0.000	0.092
Toluene	0.002	22.99%	0.002	0.000	0.000	0.002
Hexane	0.000	22.99%	0.000	0.000	0.217	0.217
All other HAPs negligible						

**Methodology**

Limited PTE for facilities on pages 1-4 (tons/yr) = Required PTE for FESOP - (PTE from combustion + PTE from insignificant activities excluding combustion)  
 Required reduction in capacity (%) = (New proposed potential emissions for facilities on pages 1-4 after controls - Limited PTE for facilities on pages 1-4)/New proposed potential emissions for facilities on pages 1-4 after controls (emissions will be limited such that controls are required)  
 Limited Metal Capacity (tons/yr) = Proposed capacity (4.95 tons/hr) x 8,760 hrs/yr x (1-required reduction in capacity (based on percent reduction))  
 Limited Sand Capacity (tons/yr) = Proposed capacity (4.95 tons/hr) x 8,760 hrs/yr x (1-required reduction in capacity (based on percent reduction))  
 Proposed PTE from facilities on pages 1-4 after controls and limitations (tons/yr) = New proposed potential emissions for facilities on pages 1-4 after controls (tons/yr) x (1-required reduction in capacity)  
 Total new proposed PTE after controls and limitations (tons/yr) = Proposed PTE from facilities on pages 1-4 after controls and limitations + PTE from insignificant activities, excluding combustion + PTE from combustion, pages 7 and 8