NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Significant Modification to a
Part 70 Operating Permit

for Kingsbury Castings Division in LaPorte County

Significant Source Modification No.: 091-41459-00078
Significant Permit Modification No.: 091-41648-00078

The Indiana Department of Environmental Management (IDEM) has received an application from Kingsbury Castings Division, located at 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345, for a significant modification of its Part 70 Operating Permit issued on May 30, 2019. If approved by IDEM’s Office of Air Quality (OAQ), this proposed modification would allow Kingsbury Castings Division to make certain changes at its existing source. Kingsbury Castings Division has applied to add one (1) new Mold Sand Handling Operation and two (2) new Shell Molding Machines.

The applicant intends to construct and operate new equipment that will emit air pollutants; therefore, the permit contains new or different permit conditions. In addition, some conditions from previously issued permits/approvals have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes (e.g. changes that add or modify synthetic minor emission limits). IDEM has reviewed this application and has developed preliminary findings, consisting of a draft permit and several supporting documents, which would allow the applicant to make this change.

A copy of the permit application and IDEM's preliminary findings are available at:

LaPorte County Library
904 Indiana Avenue
LaPorte, Indiana 46350

and

IDEM Northwest Regional Office
330 W. US Highway 30, Suites E & F
Valparaiso, IN 46385

A copy of the preliminary findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/.

A copy of the preliminary findings is also available via IDEM’s Virtual File Cabinet (VFC.) Please go to: http://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria.

How can you participate in this process?

The date that this notice is posted on IDEM’s website (https://www.in.gov/idem/5474.htm) marks the beginning of a 30-day public comment period. If the 30th day of the comment period falls on a day when IDEM offices are closed for business, all comments must be postmarked or delivered in person on the next business day that IDEM is open.
You may request that IDEM hold a public hearing about this draft permit. If adverse comments concerning the air pollution impact of this draft permit are received, with a request for a public hearing, IDEM will decide whether or not to hold a public hearing. IDEM could also decide to hold a public meeting instead of, or in addition to, a public hearing. If a public hearing or meeting is held, IDEM will make a separate announcement of the date, time, and location of that hearing or meeting. At a hearing, you would have an opportunity to submit written comments and make verbal comments. At a meeting, you would have an opportunity to submit written comments, ask questions, and discuss any air pollution concerns with IDEM staff.

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM’s mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit number SSM 091-41459-00078 and SPM 091-41648-00078 in all correspondence.

Comments should be sent to:

Ethan Horvath
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for Ethan Horvath or (317) 233-8397
Or dial directly: (317) 233-8397
Fax: (317) 232-6749 attn: Ethan Horvath
E-mail: Ehorvath@idem.in.gov

All comments will be considered by IDEM when we make a decision to issue or deny the permit. Comments that are most likely to affect final permit decisions are those based on the rules and laws governing this permitting process (326 IAC 2), air quality issues, and technical issues. IDEM does not have legal authority to regulate zoning, odor, or noise. For such issues, please contact your local officials.

For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: http://www.in.gov/idem/airquality/2356.htm; and the Citizens' Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

What will happen after IDEM makes a decision?

Following the end of the public comment period, IDEM will issue a Notice of Decision stating whether the permit has been issued or denied. If the permit is issued, it may be different than the draft permit because of comments that were received during the public comment period. If comments are received during the public notice period, the final decision will include a document that summarizes the comments and IDEM’s response to those comments. If you have submitted comments or have asked to be added to the mailing list, you will receive a Notice of the Decision. The notice will provide details on how you may appeal IDEM’s decision, if you disagree with that decision. The final decision will also be available on the Internet at the address indicated above, at the local library indicated above, at the IDEM Regional Office indicated above, and the IDEM public file room on the 12th floor of the Indiana Government Center North, 100 N. Senate Avenue, Indianapolis, Indiana 46204-2251.

If you have any questions, please contact Ethan Horvath of my staff at the above address.

Iryn Callung, Section Chief
Permits Branch
Office of Air Quality
Mr. Earl Miller  
Kingsbury Castings Division  
P.O. Box 639  
LaPorte, Indiana 46352  

Re: 091-41459-00078  
Significant Source Modification

Dear Mr. Miller:

Kingsbury Castings Division was issued Part 70 Operating Permit Renewal No. T091-40374-00078 on May 30, 2019 for a stationary ductile iron foundry located at 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345. An application to modify the source was received on May 17, 2019. Pursuant to the provisions of 326 IAC 2-7-10.5, a Significant Source Modification is hereby approved as described in the attached Technical Support Document.

Pursuant to 326 IAC 2-7-10.5, the following emission units are approved for construction at the source:

(a) One (1) Mold Sand Handling Operation, identified as Molding Sand Handling System, with a maximum throughput of 5.45 tons of sand per hour, with six (6) existing bin vent filters as controls (K7, K8, K9, K10, K11, and K12), exhausting indoors, and consisting of the following:

(1) One (1) Pneumatic Conveyor Transporter, identified as CONVEY-1, approved in 2019 for construction, and with a maximum throughput of 20,000 pounds of sand per hour;  

(2) Nine (9) Receiving Bins, identified as MOLD BIN-1 through MOLD BIN-9, approved in 2019 for construction, using Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9) as controls, and each with a maximum capacity of 3.0 tons of sand;  

(3) One (1) Mold Sand Elevator, identified as ELEV-4, approved in 2019 for construction, and equipped with diverter values to direct sand to the tanks;  

(4) One (1) Lump-breaker, identified as LUMP-3, and approved in 2019 for construction; and  

(5) Two (2) 110-ton Molding Sand Tanks, approved in 2019 for construction, and using a powered bin vent (MOLD BIN VENT-10) as control.

(b) Two (2) Shell Molding Machines, identified as MOL017 and MOL018, approved in 2019 for construction, each with a maximum capacity of 700.0 pounds per hour of pre-coating sand, 33.25 pounds per hour of binder, and a maximum heat input capacity 1.0 MMBtu/hr, using a release agent with no VOC, using no controls, and exhausting through stacks 13, 14, 17, 15, 16, and 26.

The following construction conditions are applicable to the proposed modification:
General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Quality (OAQ).

2. This approval 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

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

Commenced Construction

4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(j), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.

Approval to Construct

6. Pursuant to 326 IAC 2-7-10.5(h)(2), this Significant Source Modification authorizes the construction of the new emission unit(s), when the Significant Source Modification has been issued.

Pursuant to 326 IAC 2-7-10.5(m), the emission units constructed under this approval shall not be placed into operation prior to revision of the source’s Part 70 Operating Permit to incorporate the required operation conditions.

Pursuant to 326 IAC 2-7-12, operation of the new emission unit(s) is not approved until the Significant Permit Modification has been issued. Operating conditions shall be incorporated into the Part 70 Operating Permit as a Significant Permit Modification in accordance with 326 IAC 2-7-10.5(m)(2) and 326 IAC 2-7-12 (Permit Modification).

A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/. A copy of the permit is also available via IDEM’s Virtual File Cabinet (VFC.) Please go to: http://www.in.gov/idem/ and enter VFC in the search box. You will then have the option to search for permit documents using a variety of criteria. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: http://www.in.gov/idem/airquality/2356.htm; and the Citizens’ Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.
DRAFT

If you have any questions regarding this matter, please contact Ethan Horvath, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, or by telephone at (317) 233-8397 or (800) 451-6027, and ask for Ethan Horvath or (317) 233-8397.

Sincerely,

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

Attachments: Significant Source Modification and Technical Support Document

cc: File - LaPorte County
LaPorte County Health Department
U.S. EPA, Region 5
Compliance and Enforcement Branch
IDEM Northwest Regional Office
Significant Source Modification to a Part 70 Source

OFFICE OF AIR QUALITY

Kingsbury Castings Division
3232 3rd Road Annex, Kingsbury Industrial Park
Kingsbury, Indiana 46345

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

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 2-7 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 certain new source review requirements for new and/or existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-7-10.5, applicable to those conditions.

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<tr>
<th>Significant Source Modification No.: 091-41459-00078</th>
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<tr>
<td>Master Agency Interest ID.: 10782</td>
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<td>Office of Air Quality</td>
</tr>
</tbody>
</table>

| Issuance Date: |
# TABLE OF CONTENTS

## SECTION A  SOURCE SUMMARY

- A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]
- A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]
- A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-4(21)][326 IAC 2-7-1(21)][326 IAC 2-7-4(3)][326 IAC 2-7-5(14)]
- A.4 Not Specifically Regulated Insignificant Activities [326 IAC 2-7-4(21)][326 IAC 2-7-1(21)][326 IAC 2-7-4(3)][326 IAC 2-7-5(14)]
- A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

## SECTION B  GENERAL CONDITIONS

- B.1 Definitions [326 IAC 2-7-1]
- B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]
- B.3 Term of Conditions [326 IAC 2-1.1-9.5]
- B.4 Enforceability [326 IAC 2-7-7][IC 13-17-12]
- B.5 Severability [326 IAC 2-7-5(6)]
- B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(C)]
- B.7 Duty to Provide Information [326 IAC 2-7-16]
- B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-5(6)(F)]
- B.9 Annual Compliance Certification [326 IAC 2-7-5(6)(F)]
- B.10 Preventive Maintenance Plan [326 IAC 2-7-16]
- B.11 Emergency Provisions [326 IAC 2-7-16]
- B.12 Permit Shield [326 IAC 2-7-16][326 IAC 2-7-20][326 IAC 2-7-12]
- B.13 Prior Permits Superseded [326 IAC 2-7-10.5][326 IAC 2-7-10.5]
- B.14 Termination of Right to Operate [326 IAC 2-7-10.5][326 IAC 2-7-4(a)]
- B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]
- B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]
- B.17 Permit Amendment or Modification [326 IAC 2-7-10.5][326 IAC 2-7-10.5]
- B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-12(b)(2)]
- B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]
- B.20 Source Modification Requirement [326 IAC 2-7-10.5]
- B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]
- B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]
- B.23 Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-7-5(1)][326 IAC 2-7-11]
- B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

## SECTION C  SOURCE OPERATION CONDITIONS

### Emission Limitations and Standards  [326 IAC 2-7-5(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]
- C.2 Opacity [326 IAC 5-1]
- C.3 Open Burning [326 IAC 4-1][IC 13-17-9]
- C.4 Incineration [326 IAC 4-2][326 IAC 9-1-2]
- C.5 Fugitive Dust Emissions [326 IAC 6-4]
- C.6 Stack Height [326 IAC 1-7]
- C.7 Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61, Subpart M]

### Testing Requirements  [326 IAC 2-7-6(1)]

- C.8 Performance Testing [326 IAC 3-6]
Compliance Requirements [326 IAC 2-1.1-11] ................................................................. 25
C.9 Compliance Requirements [326 IAC 2-1.1-11]

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)] ................. 25
C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]
C.11 Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

Corrective Actions and Response Steps [326 IAC 2-7-5][326 IAC 2-7-6] ....................... 26
C.12 Emergency Reduction Plans [326 IAC 1-5-2][326 IAC 1-5-3]
C.13 Risk Management Plan [326 IAC 2-7-5(1)][40 CFR 68]
C.14 Response to Excursions or Exceedances [326 IAC 2-7-5][326 IAC 2-7-6]
C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19] .............. 27
C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]
C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]
C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)][326 IAC 2-1-1-11]

Stratospheric Ozone Protection ......................................................................................... 29
C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS ................................................. 30
Emission Limitations and Standards [326 IAC 2-7-5(1)] ...................................................... 34
D.1.1 PSD Minor Limits [326 IAC 2-2]
D.1.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]
D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]
D.1.4 Particulate Matter (PM) [326 IAC 6-3-2(e)]
D.1.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

Compliance Determination Requirements ......................................................................... 38
D.1.6 Particulate Control
D.1.7 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1-1-11]

Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)] ..................... 39
D.1.8 Visible Emissions Notations
D.1.9 Parametric Monitoring
D.1.10 Broken or Failed Bag Detection

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-19] .............. 40
D.1.11 Record Keeping Requirements
D.1.12 Reporting Requirements

SECTION E.1 NESHAP ........................................................................................................ 41
National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements
[326 IAC 2-7-5(1)] ............................................................................................................ 41
E.1.1 General Provisions Relating to National Emission Standards for Hazardous Air
E.1.2 National Emission Standards for Hazardous Air Pollutants for Iron and Steel
Foundries Area Sources NESHAP [40 CFR Part 63, Subpart ZZZZZ]

SECTION E.2 NSPS ............................................................................................................ 43
New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)] ............... 43
E.2.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1]
[40 CFR Part 60, Subpart A]
E.2.2 New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal
Combustion Engines NSPS [326 IAC 12][40 CFR Part 60, Subpart JJJJJ][326
IAC12-1]
SECTION E.3 NESHAP ........................................................................................................................... 44

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements
[326 IAC 2-7-5(1)]........................................................................................................................... 44

E.3.1 General Provisions Relating to National Emission Standards for Hazardous Air
Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

E.3.2 National Emissions Standards for Hazardous Air Pollutants for Stationary
Reciprocating Internal Combustion Engines NESHAP [40 CFR Part 63, Subpart
ZZZZ] [326 IAC 20-82]

CERTIFICATION ........................................................................................................................................ 46

EMERGENCY OCCURRENCE REPORT .................................................................................................. 47

Part 70 Quarterly Report........................................................................................................................... 49

QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT .............................................. 50

Attachment A: 40 CFR 63, Subpart ZZZZZ - National Emission Standards for Hazardous Air Pollutants
for Iron and Steel Foundries Area Sources

Attachment B: 40 CFR 60, Subpart JJJJ - New Source Performance Standards for Stationary Spark
Ignition Internal Combustion Engines

Attachment C: 40 CFR 63, Subpart ZZZZZ - National Emission Standards for Hazardous Air Pollutants for
Stationary Reciprocating Internal Combustion Engines
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 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary ductile iron foundry.

Source Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345
General Source Phone Number: (219) 362-8531
SIC Code: 3321 (Gray and Ductile Iron Foundries)
County Location: LaPorte
Source Location Status: Attainment for all criteria pollutants
Source Status: Part 70 Operating Permit Program

A.2  Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)][326 IAC 2-7-5(14)]

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

Metal Melting

(a) Two (2) Electric Induction Furnaces, identified as FRN03 and FRN04, constructed in 2000, with a total combined maximum charge rate of 4.95 tons of metal per hour, equipped with an optional fabric filter (K4) for control, and exhausting through stack K4 and general building exhausts A and B.

These furnaces, constructed in 2000, replaced two (2) existing 2.5 ton-furnaces, constructed in 1984, which replaced an existing 5-ton furnace which was constructed prior to 1977.

The two (2) Electric Induction Furnaces are considered part of the affected source under 40 CFR Part 63, Subpart ZZZZZ.

(b) One (1) Natural Gas-fired Scrap Charge Preheater, identified as HEAT2, constructed in 1976, with a maximum heat input capacity of 2.2 million British thermal units per hour, utilizing no control, and exhausting through stack 2.

Raw Material Handling and Preparation

(c) One (1) Scrap and Charge Handling Process, constructed in 1970, with a maximum capacity of 4.95 tons of metal per hour, utilizing no control, and exhausting inside the building.

The Scrap and Charge Handling System is considered part of the affected source under 40 CFR Part 63, Subpart ZZZZZ.

(d) Four (4) Natural Gas-fired Ladle Heaters, constructed prior to 1977, with a total combined
maximum heat input capacity of 2.7 million British thermal units per hour, utilizing no control, and exhausting through the general building ventilation.

(e) One (1) Magnesium Treatment Operation, constructed in 1974, with a maximum capacity of 4.95 tons of metal per hour, utilizing no control, and exhausting through general building exhausts A, B, 6, and 7.

(f) One (1) Sand Handling Operation, constructed in 1970, approved in 2019 for modification, with a maximum capacity of 5.45 tons of sand per hour, consisting of three (3) systems:

1. Core Sand Handling operation, constructed in 1970, consisting of:
   - (A) 60-ton Sand Tank
   - (B) Elevator,
   - (C) Lump-breaker,
   - (D) Diverters,
   - (E) Pneumatic Conveyor, and
   - (F) Three (3) Receiving Bins.

2. Spent Sand Handling operation, constructed in 1970, consisting of:
   - (A) Conveyors,
   - (B) Magnets,
   - (C) Screener,
   - (D) Elevator,
   - (E) Surge Tank,
   - (F) Auger, and
   - (G) Pneumatic Conveyor.
   - (H) One (1) Spent Sand Tank, identified as SST1, constructed in 1970, and using a Bin Vent Filter (K5) as control;
   - (I) One (1) Spent Sand Tank, identified as SST2, constructed in 2012, and using a Bin Vent Filter (K6) as control;

3. Mold Sand Handling Operation, constructed in 1970, consisting of:
   - (A) Conveyors,
   - (B) Elevator,
   - (C) Lump Breaker, and
   - (D) Three (3) Molding Sand Tanks, identified as MST-1 through MST-3, with
a maximum capacity of 34.0, 78.0, and 68.0 tons, respectively.

(4) One (1) Mold Sand Handling Operation, identified as Molding Sand Handling System, with a maximum throughput of 5.45 tons of sand per hour, exhausting indoors or outdoors, and consisting of the following:

(A) One (1) Pneumatic Conveyor Transporter, identified as CONVEY-1, approved in 2019 for construction, and with a maximum throughput of 10.0 tons of sand per hour;

(B) Nine (9) Receiving Sand Bins, identified as MOLD BIN-1 though MOLD BIN-9, approved in 2019 for construction each with a maximum capacity of 3.0 tons, and using Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9) as controls;

(C) One (1) Mold Sand Elevator, identified as ELEV-4, and approved in 2019 for construction;

(D) One (1) Lump Breaker, identified as LUMP-3, and approved in 2019 for construction;

(E) Two (2) 110-ton Molding Sand Tanks, approved in 2019 for construction and using a powered bin vent (MOLD BIN VENT-10) as control; and

(F) Fork lifts;

The Spent Sand Handling Operation is controlled by one (1) existing dust collector (K13) that exhausts outdoors through Stack K13.

The existing Mold Sand Handling Operations are controlled by nine (9) bin vent filters (K7, K8, K9, K10, K11, K12, K15, K16, and K17), with the ability to exhaust inside or through stack K13.

The new Mold Sand Handling Operation will be controlled by Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9).

The Core Sand Handling Operation is controlled by three (3) Bin Vent Filters (K15, K16, and K17), with the ability to exhaust inside or through stack K13.

K13 dust collector is a common control for the Spent Sand Handling Operation and the Automated Shakeout.

(g) Truck loading and unloading, constructed in 1970, with a maximum throughput of 5.45 tons of sand per hour, utilizing no control and exhausting outdoors.

Casting Operations

(h) One (1) Pouring and Cooling Line, identified as Power & Free, constructed in 1991 and modified in 2004, with a maximum capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, utilizing no control, and exhausting through stacks 1 through 5, 10, and 32.

(i) One (1) Manual Shakeout and Degating Operation, constructed in 1980 and relocated in 1994 and 2006, with a maximum capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, equipped with a shaker conveyor collector (K14), with the ability to exhaust inside or through stack K14.
(j) One (1) Automated Shakeout Machine, constructed in 2006, with a maximum capacity of 4.95 tons of metal and 4.95 tons of sand per hour, equipped with a cartridge dust collector (K13) for particulate control, with the ability to exhaust inside or through stack K13.

K13 dust collector is a common control for the Spent Sand Handling Operation and the Automated Shakeout.

Finishing Operations

(k) One (1) Shotblast Machine, identified as WHE02, constructed in 1983, with a maximum capacity of 4.95 tons of castings per hour, controlled by an integral dust collector (K1) and exhausting inside the building.

(l) One (1) Cutoff Saw, identified as SAW03, constructed in 1970, with a maximum capacity of 4.95 tons of metal per hour, equipped with a fabric filter (K3) and exhausting inside the building.

(m) One (1) Band Saw, identified as BS1, constructed in 2012, with a maximum capacity of 1,500 pounds per hour, utilizing no control and exhausting inside the building.

Mold Making

(n) Eighteen (18) Shell Molding Machines, with a total combined maximum capacity of 43,882.34 tons of sand per year (5.01 tons of sand per hour), using a release agent with no VOC, utilizing no control and exhausting through stacks 13, 14, 17, 15, 16, 24, and 26, consisting of the following:

<table>
<thead>
<tr>
<th>Mold Machines ID</th>
<th>Construction Date</th>
<th>Natural Gas fired Heater maximum Capacity (MMBTU/hr)</th>
<th>Maximum Capacity of Pre-coated sand (lbs/hr)</th>
<th>Maximum Capacity of binder (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL01</td>
<td>1970</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL02</td>
<td>1970</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL03</td>
<td>1974</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL04</td>
<td>1974</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL05</td>
<td>1975</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL06</td>
<td>1978</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL07</td>
<td>1980</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL08</td>
<td>1983</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL09</td>
<td>1983</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL10</td>
<td>1986</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL11</td>
<td>1986</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL12</td>
<td>1992</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL13</td>
<td>1992</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL14</td>
<td>1993</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL15</td>
<td>1993</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL16</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL17</td>
<td>2019*</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL18</td>
<td>2019*</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
</tbody>
</table>

The total maximum capacity of the eighteen (18) shell molding machines is determined assuming a source-wide 1:1 sand-to-metal ratio.

The maximum capacity of the shell molding machines is based on the maximum amount
of material used for the largest mold. There is historically 92% mold sand to 8% core sand.
* Approved in 2019 for construction

### Core Making

(o) Twelve (12) Shell Core Machines, with a total combined maximum capacity of 3,815.86 tons of sand per year (0.44 tons of sand per hour), using a release agent with no VOC, utilizing no control and exhausting through stacks 18 and 30, consisting of the following:

<table>
<thead>
<tr>
<th>Shell Core Machines ID</th>
<th>Construction Date</th>
<th>Natural Gas fired Heater maximum Capacity (MMBTU/hr)</th>
<th>Maximum Capacity of Pre-coated sand (lbs/hr)</th>
<th>Maximum Capacity of binder (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COR01</td>
<td>1974</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR02</td>
<td>1974</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR03</td>
<td>1979</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR04</td>
<td>1980</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR05</td>
<td>1983</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR06</td>
<td>1983</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR07</td>
<td>1999</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR08</td>
<td>1999</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR09</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR10</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR11</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR12</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
</tbody>
</table>

The total maximum capacity of the twelve (12) shell core machines is determined assuming a source-wide 1:1 sand-to-metal ratio.

The capacity of the shell core machines is based on the maximum amount of material used for the largest mold. There is historically 92% mold sand to 8% core sand.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

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

(a) Thirty-six (36) Natural Gas-fired Combustion Sources, each with heat input equal to or less than ten million (10,000,000) British thermal units per hour, with a total combined maximum capacity of 15.851 million British thermal units per hour.

(b) One (1) 20 kW Natural Gas-fired, 4-stroke rich-burn, reciprocating internal combustion engine, identified as Emergency Generator 1, constructed in March 2005.

Under 40 CFR 63, Subpart ZZZZ, this emergency generator is considered an affected facility.

(c) One (1) 74 kW Natural Gas-fired, 4-stroke rich-burn, reciprocating internal combustion engine, identified as Emergency Generator 2, constructed in 2014.

Under 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ, this emergency generator is considered an affected facility.

(d) One (1) Stationary Maintenance Glass Bead Blaster, identified as Stationary Blast Cabinet #1, approved in 2019 for construction, blasting a maximum of 2.5 tons of
substrate per hour, operating for a maximum of 200 hours per year for maintenance purposes only, using a HEPA filter for particulate control, and exhausting inside.

(e) Asbestos abatement projects regulated by 326 IAC 14-10.

A.4 Not Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-7-4(c)][326 IAC 2-7-5(14)]

This stationary source also includes the following insignificant activities which are not specifically regulated, as defined in 326 IAC 2-7-1(21):

(f) Two (2) portable glass bead blast cabinets, identified as Portable Blast Cabinet #1 and #2, constructed in 1971, using an enclosure and operating for a maximum of 200 hours per year for maintenance purposes only, using no control, and exhausting inside.

These are considered trivial activities pursuant to 2-7-1(42)(G)(iv).

(g) One (1) portable glass bead blast cabinet, identified as Portable Blast Cabinet #3, constructed in 1995, using an enclosure and operating for a maximum of 200 hours per year for maintenance purposes only, using a HEPA filter for particulate control, and exhausting inside.

This is considered a trivial activity pursuant to 2-7-1(42)(G)(iv).

(i) Three (3) dry ice blasters for cleaning patterns, using a maximum of 75 tons per year of dry ice.

(j) One (1) cold cleaning operation using aqueous solutions containing no VOCs or HAPs.

(k) Noncontact cooling tower systems with either of the following:

Forced and induced draft cooling tower system not regulated under a NESHAP.

(l) One (1) degreasing operation, with a maximum capacity of 145 gallons per 12 months constructed in 1970, using less than five percent (5%) halogenated solvents by weight.

(m) 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.

(n) Combustion source flame safety purging on startup.

(o) 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.
(p) Refractory storage not requiring air pollution control equipment.

(q) Machining where an aqueous cutting coolant continuously floods the machining interface.

(r) The following equipment related to manufacturing activities not resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment.

(s) Closed loop heating and cooling systems.

(t) Solvent recycling systems with batch capacity less than or equal to 100 gallons.

(u) Any operation using aqueous solutions containing less than 1 percent by weight of VOCs excluding HAPs.

(v) Heat exchanger cleaning and repair.

(w) Paved and unpaved roads and parking lots with public access.

(x) Blowdown for any of the following: sight glass; boiler; compressors; pumps; and cooling tower.

(y) Mold release agents using low volatile products (vapor pressure less than or equal to 2 kilopascals measured at 38°C).

(z) A laboratory as defined in 326 IAC 2-7-1(21)(D).

(aa) Farm operations.

(bb) One (1) sand pile, maximum input: 15,242 tons of loose sand per year.

A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

(a) It is a major source, as defined in 326 IAC 2-7-1(22);

(b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).
SECTION B  GENERAL CONDITIONS

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

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]
(a) This permit, T091-40374-00078, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]
Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:
(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7][IC 13-17-12]
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 Severability [326 IAC 2-7-5(5)]
The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]
This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(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. 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.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]
(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:
(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) A "responsible official" is defined at 326 IAC 2-7-1(35).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

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

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region 5
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

(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 2-7-5(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.
The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

B.10 Preventive Maintenance Plan [326 IAC 2-7-5(12)][326 IAC 1-6-3]

(a) A Preventive Maintenance Plan meets the requirements of 326 IAC 1-6-3 if it includes, at a minimum:

(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.

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, 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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

The Permittee shall implement the PMPs.

(c) 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. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).
(d) 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.11 Emergency Provisions [326 IAC 2-7-16]

(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.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe 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, or 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 Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Northwest Regional Office phone: (219) 464-0233; fax: (219) 464-0553.

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 and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 2-7-5(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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 2-7-4(c)(8) 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 2-7 and any other applicable rules.

(g) 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.

B.12 Permit Shield  [326 IAC 2-7-15][326 IAC 2-7-20][326 IAC 2-7-12]

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced 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 Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

(d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:

1. The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
2. The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
3. The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
4. The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

(e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).

(f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]

(g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

(a) All terms and conditions of permits established prior to T091-40374-00078 and issued pursuant to permitting programs approved into the state implementation plan have been either:

1. incorporated as originally stated,
2. revised under 326 IAC 2-7-10.5, or
3. deleted under 326 IAC 2-7-10.5.

(b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10][326 IAC 2-7-4(a)]

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 2-7-3 and 326 IAC 2-7-4(a).

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)][326 IAC 2-7-8(a)][326 IAC 2-7-9]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or
anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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 2-7-9(a)(3)]

(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 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(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 2-7-9(c)]

B.16 Permit Renewal [326 IAC 2-7-3][326 IAC 2-7-4][326 IAC 2-7-8(e)]

(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 2-7-4. 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(42). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

(2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source’s failure to have a permit is not a violation of 326 IAC 2-7 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, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any
additional information identified as being needed to process the application.

B.17 Permit Amendment or Modification [326 IAC 2-7-11][326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-
7-11 or 326 IAC 2-7-12 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC
2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the
request for an administrative amendment immediately upon submittal of the request. [326
IAC 2-7-11(c)(3)]

B.18 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)][326 IAC 2-7-
12(b)(2)]

(a) No Part 70 permit revision or notice shall be required under any approved economic
incentives, marketable Part 70 permits, emissions trading, and other similar programs or
processes for changes that are provided for in a Part 70 permit.

(b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit
modification procedures may be used for Part 70 modifications involving the use of
economic incentives, marketable Part 70 permits, emissions trading, and other similar
approaches to the extent that such minor Part 70 permit modification procedures are
explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable
requirements promulgated or approved by the U.S. EPA.

B.19 Operational Flexibility [326 IAC 2-7-20][326 IAC 2-7-10.5]

(a) The Permittee may make any change or changes at the source that are described in 326
IAC 2-7-20(b) or (c) without a 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 preconstruction approval required by 326 IAC 2-7-10.5 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:
in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-7-20(b)(1) and (c)(1). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-7-20(b)(1) and (c)(1).

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(37)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

(1) A brief description of the change within the source;
(2) The date on which the change will occur;
(3) Any change in emissions; and
(4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Emission Trades [326 IAC 2-7-20(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 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(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 2-7-5(9). No prior notification of IDEM, OAQ or U.S. EPA is required.
(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.20 Source Modification Requirement [326 IAC 2-7-10.5]

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

B.21 Inspection and Entry [326 IAC 2-7-6][IC 13-14-2-2][IC 13-30-3-1][IC 13-17-3-2]

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 Part 70 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 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 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 substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.22 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]
B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][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) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][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

Emission Limitations and Standards [326 IAC 2-7-5(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 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 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 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.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

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

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

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

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

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.

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

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of
326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

1. When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

2. If there is a change in the following:
   
   A. Asbestos removal or demolition start date;
   B. Removal or demolition contractor; or
   C. Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

(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 Licensed 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 Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.
Testing Requirements [326 IAC 2-7-6(1)]

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

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(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]

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 2-7-5(1)][326 IAC 2-7-6(1)]

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)]

(a) For new units:

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units shall be implemented on and after the date of initial start-up.

(b) For existing units:

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance to begin such monitoring. If, due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance, 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 and Enforcement Branch, Office of Air Quality  
100 North Senate Avenue  
MC 61-53 IGCN 1003  
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 the inability to meet this date.

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

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

(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.

C.12 Emergency Reduction Plans [326 IAC 2-7-5][326 IAC 2-7-6]

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

(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

(b) Upon direct notification by IDEM, OAQ that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(11)] [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 2-7-5] [326 IAC 2-7-6]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to 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 excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;
(2) recording that operations returned or are returning 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 normal or usual manner of operation.

(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; and/or

(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 record the reasonable response steps taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5][326 IAC 2-7-6]

(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 submit a description of its response actions to IDEM, OAQ no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) 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 a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)][326 IAC 2-6]

(a) In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), the Permittee shall submit by July 1 an emission statement covering the previous calendar year as follows:

(1) starting in 2004 and every three (3) years thereafter, and

(2) any year not already required under (1) if the source emits volatile organic compounds or oxides of nitrogen into the ambient air at levels equal to or greater than twenty-five (25) tons during the previous calendar year.
(b) The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

1. Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
2. Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(33) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

(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. Support information includes the following, where applicable:

(AA) All calibration and maintenance records.
(BB) All original strip chart recordings for continuous monitoring instrumentation.
(CC) Copies of all reports required by the Part 70 permit.

Records of required monitoring information include the following, where applicable:

(AA) The date, place, as defined in this permit, and time of sampling or measurements.
(BB) The dates analyses were performed.
(CC) The company or entity that performed the analyses.
-DD The analytical techniques or methods used.
(EE) The results of such analyses.
(FF) The operating conditions as existing at the time of sampling or measurement.

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, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of this paragraph. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response
steps taken must be reported except that 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. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
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) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with applicable standards for recycling and emissions reduction.
SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

Metal Melting

(a) Two (2) Electric Induction Furnaces, identified as FRN03 and FRN04, constructed in 2000, with a total combined maximum charge rate of 4.95 tons of metal per hour, equipped with an optional fabric filter (K4) for control, and exhausting through stack K4 and general building exhausts A and B.

These furnaces, constructed in 2000, replaced two (2) existing 2.5 ton-furnaces, constructed in 1984, which replaced an existing 5-ton furnace which was constructed prior to 1977.

The two (2) Electric Induction Furnaces are considered part of the affected source under 40 CFR Part 63, Subpart ZZZZZ.

(b) One (1) Natural Gas-fired Scrap Charge Preheater, identified as HEAT2, constructed in 1976, with a maximum heat input capacity of 2.2 million British thermal units per hour, utilizing no control, and exhausting through stack 2.

Raw Material Handling and Preparation

(c) One (1) Scrap and Charge Handling Process, constructed in 1970, with a maximum capacity of 4.95 tons of metal per hour, utilizing no control, and exhausting inside the building.

The Scrap and Charge Handling System is considered part of the affected source under 40 CFR Part 63, Subpart ZZZZZ.

(d) Four (4) Natural Gas-fired Ladle Heaters, constructed prior to 1977, with a total combined maximum heat input capacity of 2.7 million British thermal units per hour, utilizing no control, and exhausting through the general building ventilation.

(e) One (1) Magnesium Treatment Operation, constructed in 1974, with a maximum capacity of 4.95 tons of metal per hour, utilizing no control, and exhausting through general building exhausts A, B, 6, and 7.

(f) One (1) Sand Handling Operation, constructed in 1970, approved in 2019 for modification, with a maximum capacity of 5.45 tons of sand per hour, consisting of three (3) systems:

   (1) Core Sand Handling operation, constructed in 1970, consisting of:

   (A) 60-ton Sand Tank
   (B) Elevator,
   (C) Lump-breaker,
   (D) Diverters,
   (E) Pneumatic Conveyor, and
   (F) Three (3) Receiving Bins.
(2) **Spent Sand Handling operation**, constructed in 1970, consisting of:

(A) Conveyors,

(B) Magnets,

(C) Screener,

(D) Elevator,

(E) Surge Tank,

(F) Auger,

(G) Pneumatic Conveyor,

(H) One (1) Spent Sand Tank, identified as SST1, constructed in 1970, and

(I) One (1) Spent Sand Tank, identified as SST2, constructed in 2012.

(3) **Mold Sand Handling operation**, constructed in 1970, consisting of:

(A) Conveyors,

(B) Elevator,

(C) Lump Breaker, and

(D) Three (3) Molding Sand Tanks, identified as MST-1 through MST-3, with a maximum capacity of 34.0, 78.0, and 68.0 tons, respectively.

(4) One (1) **Mold Sand Handling Operation**, identified as Molding Sand Handling System, with a maximum throughput of 5.45 tons of sand per hour, exhausting indoors or outdoors, and consisting of the following:

(A) One (1) Pneumatic Conveyor Transporter, identified as CONVEY-1, approved in 2019 for construction, and with a maximum throughput of 10.0 tons of sand per hour;

(B) Nine (9) Receiving Sand Bins, identified as MOLD BIN-1 through MOLD BIN-9, approved in 2019 for construction, each with a maximum capacity of 3.0 tons, and using Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9) as controls;

(C) One (1) Mold Sand Elevator, identified as ELEV-4, and approved in 2019 for construction;

(D) One (1) Lump Breaker, identified as LUMP-3, and approved in 2019 for construction;

(F) Two (2) 110-ton Molding Sand Tanks, approved in 2019 for construction, and using a powered bin vent (MOLD BIN VENT-10) as control;
(I) Fork lifts;

The Spent Sand Handling Operation is controlled by one (1) existing Dust Collector (K13) that exhausts outdoors through Stack K13.

The existing Mold Sand Handling Operations are controlled by nine (9) bin vent filters (K7, K8, K9, K10, K11, K12, K15, K16, and K17), with the ability to exhaust inside or through stack K13.

The new Mold Sand Handling Operation will be controlled by Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9).

The Core Sand Handling Operation is controlled by three (3) Bin Vent Filters (K15, K16, and K17), and exhausting indoors.

K13 dust collector is a common control for the Spent Sand Handling Operation and the Automated Shakeout.

(g) Truck Loading and Unloading, constructed in 1970, with a maximum throughput of 5.45 tons of sand per hour, utilizing no control and exhausting outdoors.

Casting Operations

(h) One (1) Pouring and Cooling Line, identified as Power & Free, constructed in 1991 and modified in 2004, with a maximum capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, utilizing no control, and exhausting through stacks 1 through 5, 10, and 32.

(i) One (1) Manual Shakeout and Degating Operation, constructed in 1980 and relocated in 1994 and 2006, with a maximum capacity of 4.95 tons of metal per hour and 4.95 tons of sand per hour, equipped with a shaker conveyor collector (K14), with the ability to exhaust inside or through stack K14.

(j) One (1) Automated Shakeout Machine, constructed in 2006, with a maximum capacity of 4.95 tons of metal and 4.95 tons of sand per hour, equipped with a cartridge dust collector (K13) for particulate control, with the ability to exhaust inside or through stack K13.

K13 dust collector is a common control for the Spent Sand Handling Operation and the Automated Shakeout.

Finishing Operations

(k) One (1) Shotblast Machine, identified as WHE02, constructed in 1983, with a maximum capacity of 4.95 tons of castings per hour, controlled by an integral dust collector (K1) and exhausting inside the building.

(l) One (1) Cutoff Saw, identified as SAW03, constructed in 1970, with a maximum capacity of 4.95 tons of metal per hour, equipped with an optional fabric filter (K3) and exhausting inside the building.

(m) One (1) Band Saw, identified as BS1, constructed in 2012, with a maximum capacity of 1,500 pounds per hour, utilizing no control and exhausting inside the building.

Mold Making

(n) Eighteen (18) Shell Molding Machines, with a total combined maximum capacity of 43,882.34
5.01 tons of sand per hour, using a release agent with no VOC, utilizing no control and exhausting through stacks 13, 14, 17, 15, 16, 24, and 26, consisting of the following:

<table>
<thead>
<tr>
<th>Mold Machines ID</th>
<th>Construction Date</th>
<th>Natural Gas fired Heater maximum Capacity (MMBTU/hr)</th>
<th>Maximum Capacity of Pre-coated sand (lbs/hr)</th>
<th>Maximum Capacity of binder (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL01</td>
<td>1970</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL02</td>
<td>1970</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL03</td>
<td>1974</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL04</td>
<td>1974</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL05</td>
<td>1975</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL06</td>
<td>1978</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL07</td>
<td>1980</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL08</td>
<td>1983</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL09</td>
<td>1983</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL10</td>
<td>1986</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL11</td>
<td>1986</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL12</td>
<td>1992</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL13</td>
<td>1992</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL14</td>
<td>1993</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL15</td>
<td>1993</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL16</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL17</td>
<td>2019*</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL18</td>
<td>2019*</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
</tbody>
</table>

The total maximum capacity of the eighteen (18) shell molding machines is determined assuming a source-wide 1:1 sand-to-metal ratio.

The maximum capacity of the shell molding machines is based on the maximum amount of material used for the largest mold. There is historically 92% mold sand to 8% core sand.

* Approved in 2019 for construction

Core Making

Twelve (12) Shell Core Machines, with a total combined maximum capacity of 3,815.86 tons of sand per year (0.44 tons of sand per hour), using a release agent with no VOC, utilizing no control and exhausting through stacks 18 and 30, consisting of the following:

<table>
<thead>
<tr>
<th>Shell Core Machines ID</th>
<th>Construction Date</th>
<th>Natural Gas fired Heater maximum Capacity (MMBTU/hr)</th>
<th>Maximum Capacity of Pre-coated sand (lbs/hr)</th>
<th>Maximum Capacity of binder (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COR01</td>
<td>1974</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR02</td>
<td>1974</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR03</td>
<td>1979</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR04</td>
<td>1980</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR05</td>
<td>1983</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR06</td>
<td>1983</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR07</td>
<td>1999</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR08</td>
<td>1999</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR09</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR10</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
</tbody>
</table>
The total maximum capacity of the twelve (12) shell core machines is determined assuming a source-wide 1:1 sand-to-metal ratio.

The capacity of the shell core machines is based on the maximum amount of material used for the largest mold. There is historically 92% mold sand to 8% core sand.

Insignificant Activities:

(d) One (1) Stationary Maintenance Glass Bead Blaster, identified as Stationary Blast Cabinet #1, approved in 2019 for construction, blasting a maximum of 2.5 tons of substrate per hour, operating for a maximum of 200 hours per year for maintenance purposes only, using a HEPA filter for particulate control, and exhausting inside.

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

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 (PSD) not applicable, the Permittee shall comply with the following:

Electric Induction Furnaces

(a) The throughput of metal to the two (2) Electric Induction Furnaces shall not exceed 24,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The PM emissions before control from the two (2) Electric Induction Furnaces shall not exceed 0.9 pound per ton of metal throughput.

(c) The PM10 emissions before control from the two (2) Electric Induction Furnaces shall not exceed 0.86 pound per ton of metal throughput.

Compliance with these limits will limit the PM and PM10 emissions from the two (2) Furnaces to less than 25 and 15, per twelve (12) consecutive month period respectively and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2000 modification.

The 2000 modification was for the following:

(i) Removal of two (2) 2.5 ton EIFs, and

(ii) Addition of two (2) 2.5 ton EIFs (4.95 ton/hr total capacity).

Pouring & Cooling Line

(d) The PM emissions before control from the Pouring and Cooling Line (Power & Free), shall not exceed 1.60 pound per ton of metal throughput.

(e) The PM10 emissions before control from the Pouring and Cooling Line (Power & Free), shall not exceed 2.40 pound per ton of metal throughput.
(f) The CO emissions before control from the Pouring and Cooling Line (Power & Free), shall not exceed 12.45 pound per ton of metal throughput.

Compliance with these limits, combined with the metal throughput limit to the two (2) Electric Induction Furnaces in Condition D.1.1(a) and netting, will limit the PM, PM10, and CO emissions from the Pouring and Cooling Line (Power & Free) to less than 25, 15, and 100 tons per twelve (12) consecutive month period, respectively, and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2004 modification.

The 2004 modification is for the following:

(i) Conveyor Line modification and

(ii) Shutdown of Turn 1, Turn 2, and Turn 3.

Automated Shakeout

(g) The CO emissions before control from the Automated Shakeout Unit shall not exceed 6.22 pound per ton of metal throughput.

Compliance with this limit, combined with the metal throughput limit to the two (2) electric induction furnaces in Condition D.1.1(a), will limit the CO emissions from the Automated Shakeout Unit to less than 100 tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 2006 modification.

The 2006 modification is for the addition of the following:

(i) 1 Automated Shakeout Unit,

(ii) 4 Shell Core Machines, and

(iii) 4 Shell Core Machine Ovens.

Stack K13 (Spent Sand Handling Operations and Automated Shakeout)

(h) The PM emissions from Dust Collector K13 (stack K13) shall not exceed 1.83 pound per ton of metal throughput.

(i) The PM10 emissions from Dust Collector K13 (stack K13) shall not exceed 1.00 pound per ton of metal throughput.

(j) The PM2.5 emissions from Dust Collector K13 (stack K13) shall not exceed 0.59 pound per ton of metal throughput.

K13 dust collector is a common control for the Sand Handling Operations and the Automated Shakeout.

Compliance with these limits, combined with the following:

(i) Metal throughput limit to the two (2) Electric Induction Furnaces in Condition D.1.1(a), and

(ii) Potential to emit PM, PM10, and PM2.5 from the 2012 and 2019 modifications, shall limit the PM, PM10, and PM2.5 emissions to less than 25, 15, and 10 tons per twelve (12) consecutive month period render the requirements of 326 IAC 2-2 (PSD) not
applicable to the following modifications:

(i) 2006 modification,
(ii) 2012 modification, and
(iii) 2019 modification.

The 2006 modification is for the addition of following:

(i) 1 Automated Shakeout unit,
(ii) 4 Shell Core Machines, and
(iii) 4 Shell Core Machine Ovens.

The 2012 modification is for the following:

(i) addition of a 60-ton Spent Sand Storage Tank,
(ii) addition of a Dust Collector,
(iii) addition of a 1 Belt Sander and
(iv) re-evaluation of the K13 Baghouse limits.

The 2019 modification is for the following:

(i) addition of one (1) Mold Sand Handling Operation of the Sand Handling Operation, that will eventually replace the existing Mold Sand Handling Operation of the Sand Handling Operation.
(ii) addition of two (2) Mold Machines.

Shotblast Machine

(k) The PM emissions after control (K1) from the shotblast machine (WHE02) shall not exceed 4.58 pounds per hour.

Compliance with this limit, combined with the potential to emit PM from other emission units from the 1983 modification, shall limit the PM from the 1983 modification to less than twenty-five (25) tons per twelve (12) consecutive month period and render the requirements of 326 IAC 2-2 (PSD) not applicable to the 1983 modification.

The 1983 modification is for the following:

(i) replacement of 2 shotblast machines with 1 shotblast machine, and
(ii) addition of 2 shell mold machines, 2 shell mold machine ovens, 2 shell core machines, and 2 shell core machine ovens.

D.1.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

Pursuant to 326 IAC 2-2-1(tt) and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall remove or decommission the existing Mold Sand Handling Operation of the Sand Handling Operation, within 180 days from
the initial startup of the Mold Sand Handling Operation (Molding Sand Handling System).

D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

In order to render 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) not applicable, the Permittee shall comply with the following:

(a) The uncontrolled VOC emissions from the manual shakeout unit shall not exceed 1.20 pound per ton of metal throughput.

(b) The uncontrolled VOC emissions from the automated shakeout unit shall not exceed 1.20 pound per ton of metal throughput.

Compliance with these limits, combined with the metal throughput limit to the two (2) electric induction furnaces in Condition D.1.1(a), shall limit the following and render the requirements of 326 IAC 8-1-6 (VOC BACT) not applicable to each shakeout:

(i) VOC emissions from the manual shakeout unit to less than 25 tons per twelve (12) consecutive month period and

(ii) VOC emissions from the automated shakeout unit to less than 25 tons per twelve (12) consecutive month period.

D.1.4 Particulate Matter (PM) [326 IAC 6-3-2(e)]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations, Work Practices and Control Technologies), the allowable PM emission rate from the below facilities shall not exceed the rates outlined below:

<table>
<thead>
<tr>
<th>Facility</th>
<th>P = Process Weight (tons/hr)</th>
<th>E = Allowable Emissions (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrap and Charge Handling</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>including Scrap Charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preheater (HEAT2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Two (2) electric Induction Furnaces</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>(FRN03 and FRN04))</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnesium treatment</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>Pouring and cooling (Power &amp; Free)</td>
<td>9.90 (metal and sand)</td>
<td>19.05</td>
</tr>
<tr>
<td>(Total emission limit for both pouring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>and cooling)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual Shakeout and Degating</td>
<td>9.90 (metal and sand)</td>
<td>19.05</td>
</tr>
<tr>
<td>Automated Shakeout Machine</td>
<td>9.90 (metal and sand)</td>
<td>19.05</td>
</tr>
<tr>
<td>Shotblast Machine (WHE02)</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>Sand Handling Process</td>
<td>5.45</td>
<td>12.76</td>
</tr>
<tr>
<td>Mold Sand Handling Operation of the</td>
<td>5.45</td>
<td>12.76</td>
</tr>
<tr>
<td>Sand Handling Operation (Molding Sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handling System)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mold Making</td>
<td>5.01</td>
<td>12.07</td>
</tr>
<tr>
<td>Truck Loading and Unloading</td>
<td>5.45</td>
<td>12.76</td>
</tr>
<tr>
<td>Stationary Blast Cabinet #1</td>
<td>2.5</td>
<td>7.58</td>
</tr>
</tbody>
</table>

The pounds per hour PM limitations shall be calculated with the following equation:

Interpolation of the data for the process weight rate up to 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.1.5 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these emission units and control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the Preventive Maintenance Plan required by this condition.

Compliance Determination Requirements

D.1.6 Particulate Control

(a) In order to comply with Conditions, D.1.1(h), D.1.1(i), D.1.1(j) and D.1.4:

(1) The Dust Collector (K13) for particulate control shall be in operation and control emissions from the Automated Shakeout Unit and spent Sand Handling Operation at all times the Automated Shakeout Unit and spent Sand Handling Operation are in operation.

(2) The integral dust collector (K1) for particulate control shall be in operation and control emissions from the Shotblast Machine (WHE02) at all times the Shotblast Machine is in operation.

(b) In the event that a bag or cartridge failure is observed in a multi-compartment bag or cartridge 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.1.7 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) K13

In order to demonstrate the compliance status with Conditions D.1.1(h), D.1.1(i), D.1.1(j) and D.1.3, the Permittee shall perform PM, PM10 and PM2.5 testing on the spent Sand Handling and Automated Shakeout Machine emissions at the outlet of the Dust Collector (K13), within five (5) years of the date of the most recent valid compliance demonstration. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

(b) K1

In order to demonstrate the compliance status with Conditions D.1.1(k) and D.1.4, the Permittee shall perform PM testing on the Shotblaster emissions at the outlet of the Dust Collector (K1) within five (5) years from the date of the most recent valid compliance demonstration. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligations with regard to the performance testing required by this condition.
Compliance Monitoring Requirements [326 IAC 2-7-5(1)][326 IAC 2-7-6(1)]

D.1.8 Visible Emissions Notations

(a) Daily visible emission notations of the Dust Collector K13 exhaust (Stack K13) shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

(b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

D.1.9 Parametric Monitoring

The Permittee shall record the pressure drop across the Dust Collector (K1) used in conjunction with the Shotblast Machine, at least once per day when the Shotblast Machine is in operation. When for any one reading, the pressure drop across the Shotblast Machine is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 1.0 and 7.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C – Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps 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 or replaced at least once every six (6) months.

D.1.10 Broken or Failed Bag Detection

(a) For a single compartment baghouses controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
Bag 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 2-7-5(3)] [326 IAC 2-7-19]**

**D.1.11 Record Keeping Requirements**

(a) In order to document the compliance status with Condition D.1.1(a), the Permittee shall maintain records of the throughput of metal each month. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(b) In order to document the compliance status with Condition D.1.2, the Permittee shall keep records of when the existing Mold Sand Handling Operation has been removed or decommissioned.

(c) To document the compliance status with Condition D.1.8, the Permittee shall maintain daily records of the visible emission notations Dust Collector exhaust (K13). The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g., the process did not operate that day).

(d) To document the compliance status with Condition D.1.9, the Permittee shall maintain daily records of the pressure drop across the Dust Collector K1. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(e) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

**D.1.12 Reporting Requirements**

A quarterly summary of the information to document the compliance status with Condition D.1.1(a) shall be submitted using the reporting forms located at the end of this permit, or their equivalent not later than thirty (30) days following the end of each calendar year. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
Emissions Unit Description:

Metal Melting

(a) Two (2) electric induction furnaces, identified as FRN03 and FRN04, constructed in 2000, with a total combined maximum charge rate of 4.95 tons of metal per hour, equipped with an optional fabric filter (K4) for control, and exhausting through stack K4 and general building exhausts A and B.

These furnaces, constructed in 2000, replaced two (2) existing 2.5 ton-furnaces, constructed in 1984, which replaced an existing 5-ton furnace which was constructed prior to 1977.

The two (2) electric induction furnaces are considered part of the affected source under 40 CFR Part 63, Subpart ZZZZZ.

Raw Material Handling and Preparation

(c) One (1) scrap and charge handling process, constructed in 1970, with a maximum capacity of 4.95 tons of metal per hour, utilizing no control, and exhausting inside the building.

The scrap and charge handling system is considered part of the affected source under 40 CFR Part 63, Subpart ZZZZZ.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]


(a) Pursuant to 40 CFR 63.10 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources NESHAP [40 CFR Part 63, Subpart ZZZZZ]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZZ (included as Attachment A to the operating permit), for the emission units listed above:

(1) 40 CFR 63.10880(a), (b)(1), (c), and (f)
(2) 40 CFR 63.10881(a)(1), (a)(2), (d), and (e)
(3) 40 CFR 63.10885(a)(1), (a)(2)(i), (b)
(4) 40 CFR 63.10886
(5) 40 CFR 63.10890
(6) 40 CFR 63.10905
(7) 40 CFR 63.10906
SECTION E.2 NSPS

<table>
<thead>
<tr>
<th>Emissions Unit Description:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insignificant Activity:</td>
</tr>
<tr>
<td>(c) One (1) 74 kW natural gas-fired, 4-stroke rich-burn, reciprocating internal combustion engine, identified as Emergency Generator 2, constructed in 2014.</td>
</tr>
<tr>
<td>Under 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ, this emergency generator is considered an affected facility.</td>
</tr>
<tr>
<td>(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)</td>
</tr>
</tbody>
</table>

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR Part 60, Subpart A]

| (a) Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 12-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 60, Subpart JJJJ. |
| (b) Pursuant to 40 CFR 60.4, the Permittee shall submit all required notifications and reports to: |
| Indiana Department of Environmental Management |
| Compliance and Enforcement Branch, Office of Air Quality |
| 100 North Senate Avenue |
| MC 61-53 IGCN 1003 |
| Indianapolis, Indiana 46204-2251 |

E.2.2 New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines NSPS [326 IAC 12] [40 CFR Part 60, Subpart JJJJ][326 IAC12-1]

The Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart JJJJ (included as Attachment B to the operating permit), which are incorporated by reference as 326 IAC 12, for the emission units listed above:

| (1) 40 CFR 60.4230(a)(4)(iv) and (c) |
| (2) 40 CFR 60.4233(d) |
| (3) 40 CFR 60.4234 |
| (4) 40 CFR 60.4236(c) |
| (5) 40 CFR 60.4237 |
| (6) 40 CFR 60.4243(b),(d), and (e) |
| (7) 40 CFR 60.4245(a) and (b) |
| (8) 40 CFR 60.4246 |
| (9) 40 CFR 60.4248 |
| (10) Tables 1 and 3 |
SECTION E.3

Emissions Unit Description:

Insignificant Activities:

(b) One (1) 20 kW natural gas-fired, 4-stroke rich-burn, reciprocating internal combustion engine, identified as Emergency Generator 1, constructed in March 2005.

Under 40 CFR 63, Subpart ZZZZ, this emergency generator is considered an affected facility.

(c) One (1) 74 kW natural gas-fired, 4-stroke rich-burn, reciprocating internal combustion engine, identified as Emergency Generator 2, constructed in 2014.

Under 40 CFR 60, Subpart JJJJ and 40 CFR 63, Subpart ZZZZ, this emergency generator is considered an affected facility.

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

National Emission Standards for Hazardous Air Pollutants (NESHAP) Requirements [326 IAC 2-7-5(1)]


(a) Pursuant to 40 CFR 63.1 the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1, for the emission unit(s) listed above, except as otherwise specified in 40 CFR Part 63, Subpart ZZZZ.

(b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251


The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment C to the operating permit), which are incorporated by reference as 326 IAC 20-82,

(a) Emergency Generator 1:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), and (d)
(3) 40 CFR 63.6590(a)(1)(iii)
(4) 40 CFR 63.6595(a)(1) and (c)
(5) 40 CFR 63.6603(a)
(6) 40 CFR 63.6605
(7) 40 CFR 63.6625(e)(3),(f),(h), and (j)
(8) 40 CFR 63.6640
(9) 40 CFR 63.6645 (a)(5)
(10) 40 CFR 63.6655 except (c)
(11) 40 CFR 63.6660
(12) 40 CFR 63.6665
(13) 40 CFR 63.6670
(14) 40 CFR 63.6675
(15) Tables 2d, 6 and 8

(b) Emergency Generator 2:
(1) 40 CFR 63.6580
(2) 40 CFR 63.6585(a), (c), and (d)
(3) 40 CFR 63.6590(a)(2)(iii)
(4) 40 CFR 63.6590(c)(1)
(5) 40 CFR 63.6665
(6) 40 CFR 63.6670
(7) 40 CFR 63.6675
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:

Phone:

Date:
This is an emergency as defined in 326 IAC 2-7-1(12) 
- The Permittee must notify the Office of Air Quality (OAQ), within four (4) daytime business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and 
- The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

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

Facility/Equipment/Operation:

Control Equipment:

Permit Condition or Operation Limitation in Permit:

Description of the Emergency:

Describe the cause of the Emergency:
If any of the following are not applicable, mark N/A

<table>
<thead>
<tr>
<th>Date/Time Emergency started:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time Emergency was corrected:</td>
</tr>
<tr>
<td>Was the facility being properly operated at the time of the emergency?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Pollutants Emitted: TSP, PM-10, SO₂, VOC, NOₓ, CO, Pb, other:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated amount of pollutant(s) emitted during emergency:</td>
</tr>
<tr>
<td>Describe the steps taken to mitigate the problem:</td>
</tr>
<tr>
<td>Describe the corrective actions/response steps taken:</td>
</tr>
<tr>
<td>Describe the measures taken to minimize emissions:</td>
</tr>
</tbody>
</table>

| 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:_______________________________________
Part 70 Quarterly Report

Source Name: Kingsbury Castings Division
Source Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345
Part 70 Permit No.: T091-40374-00078
Facility: Electric induction furnaces
Parameter: Metal throughput
Limit: The throughput of metal to the two (2) electric induction furnaces shall not exceed 24,000 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>YEAR</th>
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<table>
<thead>
<tr>
<th>Month</th>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 1 + Column 2</th>
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<tbody>
<tr>
<td></td>
<td>This Month (tons)</td>
<td>Previous 11 Months (tons)</td>
<td>12 Month Total (tons)</td>
</tr>
<tr>
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</table>

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

Submitted by: ____________________________
Title / Position: __________________________
Signature: ________________________________
Date: ____________________________
Phone: ________________________________
Kingsbury Castings Division
Source Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345
Part 70 Permit No.: T091-40374-00078

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B -Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, 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".

**□ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.**

**□ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD**

<table>
<thead>
<tr>
<th>Permit Requirement (specify permit condition #)</th>
<th>Date of Deviation:</th>
<th>Duration of Deviation:</th>
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<tbody>
<tr>
<td>Number of Deviations:</td>
<td></td>
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<tr>
<td>Probable Cause of Deviation:</td>
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<tr>
<td>Response Steps Taken:</td>
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<td>Response Steps Taken:</td>
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<td>Permit Requirement (specify permit condition #)</td>
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<td>Probable Cause of Deviation:</td>
<td></td>
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<tr>
<td>Response Steps Taken:</td>
<td></td>
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</tbody>
</table>

Form Completed by: ________________________________
Title / Position: ________________________________
Date: ________________________________
Phone: ________________________________
What this Subpart Covers

§ 63.7680 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants (NESHAP) for iron and steel foundries. This subpart also establishes requirements to demonstrate initial and continuous compliance with the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart.

§ 63.7681 Am I subject to this subpart?

You are subject to this subpart if you own or operate an iron and steel foundry that is (or is part of) a major source of hazardous air pollutant (HAP) emissions. Your iron and steel foundry is a major source of HAP for purposes of this subpart if it emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year or if it is located at a facility that emits or has the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year as defined in § 63.2.


§ 63.7682 What parts of my foundry does this subpart cover?

(a) The affected source is each new or existing iron and steel foundry.

(b) This subpart covers emissions from metal melting furnaces, scrap preheaters, pouring areas, pouring stations, automated conveyor and pallet cooling lines, automated shakeout lines, and mold and core making lines. This subpart also covers fugitive emissions from foundry operations.

(c) An affected source is existing if you commenced construction or reconstruction of the affected source before December 23, 2002.

(d) An affected source is new if you commenced construction or reconstruction of the affected source on or after December 23, 2002. An affected source is reconstructed if it meets the definition of “reconstruction” in § 63.2.

§ 63.7683 When do I have to comply with this subpart?

(a) Except as specified in paragraph (b) of this section, if you have an existing affected source, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that
applies to you no later than April 23, 2007. Major source status for existing affected sources must be determined no later than April 23, 2007.

(b) If you have an existing affected source, you must comply with the work practice standards in § 63.7700(b) or (c), as applicable, no later than April 22, 2005.

(c) If you have a new affected source for which the initial startup date is on or before April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you by April 22, 2004.

(d) If you have a new affected source for which the initial startup date is after April 22, 2004, you must comply with each emissions limitation, work practice standard, and operation and maintenance requirement in this subpart that applies to you upon initial startup.

(e) If your iron and steel foundry is an area source that becomes a major source of HAP, you must meet the requirements of § 63.6(c)(5).

(f) You must meet the notification and schedule requirements in § 63.7750. Note that several of these notifications must be submitted before the compliance date for your affected source.

**Emissions Limitations**

§ 63.7690 What emissions limitations must I meet?

(a) You must meet the emissions limits or standards in paragraphs (a)(1) through (11) of this section that apply to you. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for particulate matter (PM) in paragraph (a)(1)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(1)(ii) of this section:

   (i) 0.005 grains of PM per dry standard cubic foot (gr/dscf), or

   (ii) 0.0004 gr/dscf of total metal HAP.

(2) For each cupola metal melting furnace at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(2)(i) or (ii) of this section or, alternatively the limit for total metal HAP in paragraph (a)(2)(iii) or (iv) of this section:

   (i) 0.006 gr/dscf of PM; or

   (ii) 0.10 pound of PM per ton (lb/ton) of metal charged, or

   (iii) 0.0005 gr/dscf of total metal HAP; or

   (iv) 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(3)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(3)(ii) of this section:

   (i) 0.002 gr/dscf of PM, or
(ii) 0.0002 gr/dscf of total metal HAP.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(4)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(4)(ii) of this section:

(i) 0.001 gr/dscf of PM, or

(ii) 0.00008 gr/dscf of total metal HAP.

(5) For each pouring station at an existing iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(5)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(5)(ii) of this section:

(i) 0.010 gr/dscf of PM, or

(ii) 0.0008 gr/dscf of total metal HAP.

(6) For each pouring area or pouring station at a new iron and steel foundry, you must not discharge emissions through a conveyance to the atmosphere that exceed either the limit for PM in paragraph (a)(6)(i) of this section or, alternatively the limit for total metal HAP in paragraph (a)(6)(ii) of this section:

(i) 0.002 gr/dscf of PM, or

(ii) 0.0002 gr/dscf of total metal HAP.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, you must not discharge any fugitive emissions to the atmosphere from foundry operations that exhibit opacity greater than 20 percent (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, you must not discharge emissions of volatile organic hazardous air pollutants (VOHAP) through a conveyance to the atmosphere that exceed 20 parts per million by volume (ppmv) corrected to 10 percent oxygen.

(9) As an alternative to the work practice standard in § 63.7700(e) for a scrap preheater at an existing iron and steel foundry or in § 63.7700(f) for a scrap preheater at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new iron and steel foundry, you must not discharge emissions of VOHAP through a conveyance to the atmosphere that exceed a flow-weighted average of 20 ppmv.

(11) For each triethylamine (TEA) cold box mold or core making line at a new or existing iron and steel foundry, you must meet either the emissions limit in paragraph (a)(11)(i) of this section or, alternatively the emissions standard in paragraph (a)(11)(ii) of this section:

(i) You must not discharge emissions of TEA through a conveyance to the atmosphere that exceed 1 ppmv, as determined according to the performance test procedures in § 63.7732(g); or

(ii) You must reduce emissions of TEA from each TEA cold box mold or core making line by at least 99 percent, as determined according to the performance test procedures in § 63.7732(g).

(b) You must meet each operating limit in paragraphs (b)(1) through (5) of this section that applies to you.
(1) You must install, operate, and maintain a capture and collection system for all emissions sources subject to an emissions limit for VOHAP or TEA in paragraphs (a)(8) through (11) of this section.

(i) Each capture and collection system must meet accepted engineering standards, such as those published by the American Conference of Governmental Industrial Hygienists.

(ii) You must operate each capture system at or above the lowest value or settings established as operating limits in your operation and maintenance plan.

(2) You must operate each wet scrubber applied to emissions from a metal melting furnace, scrap preheater, pouring area, or pouring station subject to an emissions limit for PM or total metal HAP in paragraphs (a)(1) through (6) of this section such that the 3-hour average pressure drop and scrubber water flow rate does not fall below the minimum levels established during the initial or subsequent performance test.

(3) You must operate each combustion device applied to emissions from a cupola metal melting furnace subject to the emissions limit for VOHAP in paragraph (a)(8) of this section, such that the 15-minute average combustion zone temperature does not fall below 1,300 degrees Fahrenheit (°deg;F). Periods when the cupola is off blast and for 15 minutes after going on blast from an off blast condition are not included in the 15-minute average.

(4) You must operate each combustion device applied to emissions from a scrap preheater subject to the emissions limit for VOHAP in paragraph (a)(9) of this section or from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section, such that the 3-hour average combustion zone temperature does not fall below the minimum level established during the initial or subsequent performance test.

(5) You must operate each wet acid scrubber applied to emissions from a TEA cold box mold or core making line subject to the emissions limit for TEA in paragraph (a)(11) of this section such that:

(i) The 3-hour average scrubbing liquid flow rate does not fall below the minimum level established during the initial or subsequent performance test; and

(ii) The 3-hour average pH of the scrubber blowdown, as measured by a continuous parameter monitoring system (CPMS), does not exceed 4.5 or the pH of the scrubber blowdown, as measured once every 8 hours during process operations, does not exceed 4.5.

(c) If you use a control device other than a baghouse, wet scrubber, wet acid scrubber, or combustion device, you must prepare and submit a monitoring plan containing the information listed in paragraphs (c)(1) through (5) of this section. The monitoring plan is subject to approval by the Administrator.

(1) A description of the device;

(2) Test results collected in accordance with § 63.7732 verifying the performance of the device for reducing emissions of PM, total metal HAP, VOHAP, or TEA to the levels required by this subpart;

(3) A copy of the operation and maintenance plan required by § 63.7710(b);

(4) A list of appropriate operating parameters that will be monitored to maintain continuous compliance with the applicable emissions limitation(s); and

(5) Operating parameter limits based on monitoring data collected during the performance test.

Work Practice Standards

§ 63.7700 What work practice standards must I meet?

(a) For each segregated scrap storage area, bin or pile, you must either comply with the certification requirements in paragraph (b) of this section, or prepare and implement a plan for the selection and inspection of scrap according to the requirements in paragraph (c) of this section. You may have certain scrap subject to paragraph (b) of this section and other scrap subject to paragraph (c) of this section at your facility provided the scrap remains segregated until charge make-up.

(b) You must prepare and operate at all times according to a written certification that the foundry purchases and uses only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids. For the purpose of this paragraph (b), “free organic liquids” is defined as material that fails the paint filter test by EPA Method 9095A, “Paint Filter Liquids Test” (Revision 1, December 1996), as published in EPA Publication SW-846 “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods” (incorporated by reference—see §63.14). Any post-consumer engine blocks, post-consumer oil filters, or oily turnings that are processed and/or cleaned to the extent practicable such that the materials do not include lead components, mercury switches, chlorinated plastics, or free organic liquids can be included in this certification.

(c) You must prepare and operate at all times according to a written plan for the selection and inspection of iron and steel scrap to minimize, to the extent practicable, the amount of organics and HAP metals in the charge materials used by the iron and steel foundry. This scrap selection and inspection plan is subject to approval by the Administrator. You must keep a copy of the plan onsite and readily available to all plant personnel with materials acquisition or inspection duties. You must provide a copy of the material specifications to each of your scrap vendors. Each plan must include the information specified in paragraphs (c)(1) through (3) of this section.

(1) A materials acquisition program to limit organic contaminants according to the requirements in paragraph (c)(1)(i) or (ii) of this section, as applicable.

(i) For scrap charged to a scrap preheater, electric arc metal melting furnace, or electric induction metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of used oil filters, chlorinated plastic parts, organic liquids, and a program to ensure the scrap materials are drained of free liquids; or

(ii) For scrap charged to a cupola metal melting furnace, specifications for scrap materials to be depleted (to the extent practicable) of the presence of chlorinated plastic, and a program to ensure the scrap materials are drained of free liquids.

(2) A materials acquisition program specifying that the scrap supplier remove accessible mercury switches from the trunks and hoods of any automotive bodies contained in the scrap and remove accessible lead components such as batteries and wheel weights. You must either obtain and maintain onsite a copy of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable, or document your attempts to obtain a copy of these procedures from the scrap suppliers servicing your area.

(3) Procedures for visual inspection of a representative portion, but not less than 10 percent, of all incoming scrap shipments to ensure the materials meet the specifications.

(i) The inspection procedures must identify the location(s) where inspections are to be performed for each type of shipment. Inspections may be performed at the scrap supplier’s facility. The selected location(s) must provide a reasonable vantage point, considering worker safety, for visual inspection.

(ii) The inspection procedures must include recordkeeping requirements that document each visual inspection and the results.

(iii) The inspection procedures must include provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and limiting purchases from vendors whose shipments fail to meet specifications for more than three inspections in one calendar year.
(iv) If the inspections are performed at the scrap supplier's facility, the inspection procedures must include an explanation of how the periodic inspections ensure that not less than 10 percent of scrap purchased from each supplier is subject to inspection.

(d) For each furan warm box mold or core making line in a new or existing iron and steel foundry, you must use a binder chemical formulation that does not contain methanol as a specific ingredient of the catalyst formulation as determined by the Material Safety Data Sheet. This requirement does not apply to the resin portion of the binder system.

(e) For each scrap preheater at an existing iron and steel foundry, you must meet either the requirement in paragraph (e)(1) or (2) of this section. As an alternative to the requirement in paragraph (e)(1) or (2) of this section, you must meet the VOHAP emissions limit in § 63.7690(a)(9).

1. You must operate and maintain a gas-fired preheater where the flame directly contacts the scrap charged; or

2. You must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section.

(f) For each scrap preheater at a new iron and steel foundry, you must charge only material that is subject to and in compliance with the scrap certification requirement in paragraph (b) of this section. As an alternative to this requirement, you must meet the VOHAP emissions limit in § 63.7690(a)(9).


Operation and Maintenance Requirements

§ 63.7710 What are my operation and maintenance requirements?

(a) As required by § 63.6(e)(1)(i), you must always operate and maintain your iron and steel foundry, including air pollution control and monitoring equipment, in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by this subpart.

(b) You must prepare and operate at all times according to a written operation and maintenance plan for each capture and collection system and control device for an emissions source subject to a PM, metal HAP, TEA, or VOHAP emissions limit in § 63.7690(a). Your operation and maintenance plan also must include procedures for igniting gases from mold vents in pouring areas and pouring stations that use a sand mold system. This operation and maintenance plan is subject to approval by the Administrator. Each plan must contain the elements described in paragraphs (b)(1) through (6) of this section.

1. Monthly inspections of the equipment that is important to the performance of the total capture system (i.e., pressure sensors, dampers, and damper switches). This inspection must include observations of the physical appearance of the equipment (e.g., presence of holes in the ductwork or hoods, flow constrictions caused by dents or accumulated dust in the ductwork, and fan erosion). The operation and maintenance plan must also include requirements to repair the defect or deficiency as soon as practicable.

2. Operating limits for each capture system for an emissions source subject to an emissions limit or standard for VOHAP or TEA in § 63.7690(a)(8) through (11). You must establish the operating according to the requirements in paragraphs (b)(2)(i) through (iii) of this section.

(i) Select operating limit parameters appropriate for the capture system design that are representative and reliable indicators of the performance of the capture system. At a minimum, you must use appropriate operating limit parameters that indicate the level of the ventilation draft and damper position settings for the capture system when operating to collect emissions, including revised settings for seasonal variations. Appropriate operating limit parameters for ventilation draft include, but are not limited to: volumetric flow rate through each separately ducted hood, total volumetric flow rate at the inlet to the control device to which the capture system is vented, fan motor amperage, or static pressure. Any parameter for damper position setting may be used that indicates the duct damper position related to the fully open setting.
(ii) For each operating limit parameter selected in paragraph (b)(2)(i) of this section, designate the value or setting for the parameter at which the capture system operates during the process operation. If your operation allows for more than one process to be operating simultaneously, designate the value or setting for the parameter at which the capture system operates during each possible configuration that you may operate (i.e., the operating limits with one furnace melting, two melting, as applicable to your plant).

(iii) Include documentation in your plan to support your selection of the operating limits established for your capture system. This documentation must include a description of the capture system design, a description of the capture system operating during production, a description of each selected operating limit parameter, a rationale for why you chose the parameter, a description of the method used to monitor the parameter according to the requirements of § 63.7740(a), and the data used to set the value or setting for the parameter for each of your process configurations.

(3) Preventative maintenance plan for each control device, including a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance.

(4) A site-specific monitoring plan for each bag leak detection system. For each bag leak detection system that operates on the triboelectric effect, the monitoring plan must be consistent with the recommendations contained in the U.S. Environmental Protection Agency guidance document “Fabric Filter Bag Leak Detection Guidance” (EPA-454/R-98-015). This baghouse monitoring plan is subject to approval by the Administrator. The owner or operator shall operate and maintain the bag leak detection system according to the site-specific monitoring plan at all times. The plan must address all of the items identified in paragraphs (b)(4)(i) through (v) of this section.

(i) Installation of the bag leak detection system.

(ii) Initial and periodic adjustment of the bag leak detection system including how the alarm set-point will be established.

(iii) Operation of the bag leak detection system including quality assurance procedures.

(iv) How the bag leak detection system will be maintained including a routine maintenance schedule and spare parts inventory list.

(v) How the bag leak detection system output will be recorded and stored.

(5) Corrective action plan for each baghouse. The plan must include the requirement that, in the event a bag leak detection system alarm is triggered, you must initiate corrective action to determine the cause of the alarm within 1 hour of the alarm, initiate corrective action to correct the cause of the problem within 24 hours of the alarm, and complete the corrective action as soon as practicable. Corrective actions taken may include, but are not limited to:

(i) Inspecting the baghouse for air leaks, torn or broken bags or filter media, or any other condition that may cause an increase in emissions.

(ii) Sealing off defective bags or filter media.

(iii) Replacing defective bags or filter media or otherwise repairing the control device.

(iv) Sealing off a defective baghouse compartment.

(v) Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.

(vi) Making process changes.

(vii) Shutting down the process producing the PM emissions.

(6) Procedures for providing an ignition source to mold vents of sand mold systems in each pouring area and pouring station unless you determine the mold vent gases either are not ignitable, ignite automatically, or cannot be ignited
due to accessibility or safety issues. You must document and maintain records of this determination. The
determination of ignitability, accessibility, and safety may encompass multiple casting patterns provided the castings
utilize similar sand-to-metal ratios, binder formulations, and coating materials. The determination of ignitability must
be based on observations of the mold vents within 5 minutes of pouring, and the flame must be present for at least 15
seconds for the mold vent to be considered ignited. For the purpose of this determination:

(i) Mold vents that ignite more than 75 percent of the time without the presence of an auxiliary ignition source are
considered to ignite automatically; and

(ii) Mold vents that do not ignite automatically and cannot be ignited in the presence of an auxiliary ignition source
more than 25 percent of the time are considered to be not ignitable.


General Compliance Requirements

§ 63.7720 What are my general requirements for complying with this subpart?

(a) You must be in compliance with the emissions limitations, work practice standards, and operation and
maintenance requirements in this subpart at all times, except during periods of startup, shutdown, or malfunction.

(b) During the period between the compliance date specified for your iron and steel foundry in § 63.7683 and the date
when applicable operating limits have been established during the initial performance test, you must maintain a log
detailing the operation and maintenance of the process and emissions control equipment.

(c) You must develop a written startup, shutdown, and malfunction plan according to the provisions in § 63.6(e)(3).
The startup, shutdown, and malfunction plan also must specify what constitutes a shutdown of a cupola and how to
determine that operating conditions are normal following startup of a cupola.


Initial Compliance Requirements

§ 63.7730 By what date must I conduct performance tests or other initial compliance demonstrations?

(a) As required by § 63.7(a)(2), you must conduct a performance test no later than 180 calendar days after the
compliance date that is specified in § 63.7683 for your iron and steel foundry to demonstrate initial compliance with
each emissions limitation in § 63.7690 that applies to you.

(b) For each work practice standard in § 63.7700 and each operation and maintenance requirement in § 63.7710 that
applies to you where initial compliance is not demonstrated using a performance test, you must demonstrate initial
compliance no later than 30 calendar days after the compliance date that is specified for your iron and steel foundry
in § 63.7683.

(c) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, you must
demonstrate initial compliance with either the proposed emissions limit or the promulgated emissions limit no later
than October 19, 2004 or no later than 180 calendar days after startup of the source, whichever is later, according to
§ 63.7(a)(2)(ix).

(d) If you commenced construction or reconstruction between December 23, 2002 and April 22, 2004, and you chose
to comply with the proposed emissions limit when demonstrating initial compliance, you must conduct a second
performance test to demonstrate compliance with the promulgated emissions limit by October 19, 2007 or after
startup of the source, whichever is later, according to § 63.7(a)(2)(ix).
§ 63.7731 When must I conduct subsequent performance tests?

(a) You must conduct subsequent performance tests to demonstrate compliance with all applicable PM or total metal HAP, VOHAP, and TEA emissions limitations in § 63.7690 for your iron and steel foundry no less frequently than every 5 years and each time you elect to change an operating limit or to comply with a different alternative emissions limit, if applicable. The requirement to conduct performance tests every 5 years does not apply to an emissions source for which a continuous emissions monitoring system (CEMS) is used to demonstrate continuous compliance.

(b) You must conduct subsequent performance tests to demonstrate compliance with the opacity limit in § 63.7690(a)(7) for your iron and steel foundry no less frequently than once every 6 months.


§ 63.7732 What test methods and other procedures must I use to demonstrate initial compliance with the emissions limitations?

(a) You must conduct each performance test that applies to your iron and steel foundry based on your selected compliance alternative, if applicable, according to the requirements in § 63.7(e)(1) and the conditions specified in paragraphs (b) through (i) of this section.

(b) To determine compliance with the applicable emissions limit for PM in § 63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (b)(1) through (6) of this section.

(1) Determine the concentration of PM according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 5, 5B, 5D, 5F, or 5I, as applicable, to determine the PM concentration. The PM concentration is determined using only the front-half (probe rinse and filter) of the PM catch.

(2) Collect a minimum sample volume of 60 dscf of gas during each PM sampling run. A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater. For a cupola metal melting furnace at an existing iron and steel foundry that is subject to the PM emissions limit in § 63.7690(a)(ii), calculate the PM emissions rate in pounds of PM per ton (lb/ton) of metal charged using Equation 1 of this section:
Where:

\[ EF_{PM} = CP_{PM} \times \left( \frac{Q}{M_{\text{charge}}} \right) \times \left( \frac{t_{\text{test}}}{7,000} \right) \]  

(\text{Eq.1})

Where:

\[ EF_{PM} = \text{Mass emissions rate of PM, pounds of PM per ton (lb/ton) of metal charged;} \]

\[ CP_{PM} = \text{Concentration of PM measured during performance test run, gr/dscf;} \]

\[ Q = \text{Volumetric flow rate of exhaust gas, dry standard cubic feet per minute (dscfm);} \]

\[ M_{\text{charge}} = \text{Mass of metal charged during performance test run, tons;} \]

\[ t_{\text{test}} = \text{Duration of performance test run, minutes;} \text{ and} \]

\[ 7,000 = \text{Unit conversion factor, grains per pound (gr/lb).} \]

(c) To determine compliance with the applicable emissions limit for total metal HAP in § 63.7690(a)(1) through (6) for a metal melting furnace, scrap preheater, pouring station, or pouring area, follow the test methods and procedures in paragraphs (c)(1) through (6) of this section.

(1) Determine the concentration of total metal HAP according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (c)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 29 to determine the total metal HAP concentration.

(2) A minimum of three valid test runs are needed to comprise a performance test.

(3) For cupola metal melting furnaces, sample only during times when the cupola is on blast.

(4) For electric arc and electric induction metal melting furnaces, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, melting, alloying, refining, slagging, and tapping.

(5) For scrap preheaters, sample only during normal production conditions, which may include, but are not limited to the following cycles: Charging, heating, and discharging.

(6) Determine the total mass of metal charged to the furnace or scrap preheater during each performance test run and calculate the total metal HAP emissions rate (pounds of total metal HAP per ton (lb/ton) of metal charged) using Equation 2 of this section:
Where:

\[ E_{\text{TMHAP}}^\text{EF} = C_{\text{TMHAP}} \times \left( \frac{Q}{M_{\text{charge}}} \right) \times \left( \frac{t_{\text{test}}}{7,000} \right) \]  \hspace{1cm} (Eq. 2)

Where:

\( E_{\text{TMHAP}}^\text{EF} \) = Emissions rate of total metal HAP, pounds of total metal HAP per ton (lb/ton) of metal charged;

\( C_{\text{TMHAP}} \) = Concentration of total metal HAP measured during performance test run, gr/dscf;

\( Q \) = Volumetric flow rate of exhaust gas, dscfm;

\( M_{\text{charge}} \) = Mass of metal charged during performance test run, tons;

\( t_{\text{test}} \) = Duration of performance test run, minutes; and

7,000 = Unit conversion factor, gr/lb.

(d) To determine compliance with the opacity limit in § 63.7690(a)(7) for fugitive emissions from buildings or structures housing any iron and steel foundry emissions source at the iron and steel foundry, follow the procedures in paragraphs (d)(1) and (2) of this section.

(1) Using a certified observer, conduct each opacity test according to the requirements in EPA Method 9 (40 CFR part 60, appendix A) and § 63.6(h)(5). The certified observer may identify a limited number of openings or vents that appear to have the highest opacities and perform opacity observations on the identified openings or vents in lieu of performing observations for each opening or vent from the building or structure. Alternatively, a single opacity observation for the entire building or structure may be performed, if the fugitive release points afford such an observation.

(2) During testing intervals when PM performance tests, if applicable, are being conducted, conduct the opacity test such the opacity observations are recorded during the PM performance tests.

(e) To determine compliance with the applicable VOHAP emissions limit in § 63.7690(a)(8) for a cupola metal melting furnace or in § 63.7690(a)(9) for a scrap preheater, follow the test methods and procedures in paragraphs (e)(1) through (4) of this section.

(1) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (b)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of total gaseous nonmethane organics (TGNMO) or Method 25A to determine the concentration of total organic compounds (TOC), using hexane as the calibration gas.

(2) Determine the average VOHAP, TGNMO, or TOC concentration using a minimum of three valid test runs. Each test run must include a minimum of 60 continuous operating minutes.
(3) For a cupola metal melting furnace, correct the measured concentration of VOHAP, TGNMO, or TOC for oxygen content in the gas stream using Equation 3 of this section:

\[
C_{\text{VOHAP, corr}} = \frac{10.9\%}{10.9\% - \%O_2} \times C_{\text{VOC AP}}
\]  
(Eq. 3)

Where:

\( C_{\text{VOHAP}} \) = Concentration of VOHAP in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the concentration of TGNMO or TOC in ppmv as hexane as measured by Method 25 or 25A in 40 CFR part 60, appendix A; and

\( \%O_2 \) = Oxygen concentration in gas stream, percent by volume (dry basis).

(4) For a cupola metal melting furnace, measure the combustion zone temperature of the combustion device with the CPMS required in § 63.7740(d) during each sampling run in 15-minute intervals. Determine and record the 15-minute average of the three runs.

(f) Follow the applicable procedures in paragraphs (f)(1) through (3) of this section to determine compliance with the VOHAP emissions limit in § 63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines.

(1) Follow these procedures to demonstrate compliance by direct measurement of total hydrocarbons (a surrogate for VOHAP) using a volatile organic compound (VOC) CEMS.

(i) Using the VOC CEMS required in § 63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) for 180 continuous operating minutes. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Reduce the monitoring data to hourly averages as specified in § 63.8(g)(2).

(iii) Compute and record the 3-hour average of the monitoring data.

(2) As an alternative to the procedures in paragraph (f)(1) of this section, you may demonstrate compliance with the VOHAP emissions limit in § 63.7690(a)(10) by establishing a site-specific TOC emissions limit that is correlated to the VOHAP emissions limit according to the procedures in paragraph (f)(2)(i) through (ix) of this section.

(i) Determine the VOHAP concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraph (f)(2)(ii) through (vi) of this section.

(ii) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. Sampling sites must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(iii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iv) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.

(v) Method 4 to determine the moisture content of the stack gas.

(vi) Method 18 to determine the VOHAP concentration. Alternatively, you may use Method 25 to determine the concentration of TGNMO using hexane as the calibration gas.

(vii) Using the CEMS required in § 63.7740(g), measure and record the concentration of total hydrocarbons (as hexane) during each of the Method 18 (or Method 25) sampling runs. You must measure emissions at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.
(viii) Calculate the average VOHAP (or TGNMO) concentration for the source test as the arithmetic average of the concentrations measured for the individual test runs, and determine the average concentration of total hydrocarbon (as hexane) as measured by the CEMS during all test runs.

(ix) Calculate the site-specific VOC emissions limit using Equation 4 of this section:

\[
\text{VOC}_{\text{limit}} = 20 \times \frac{C_{\text{VOHAP,avg}}}{C_{\text{CEM}}} \quad (\text{Eq. 4})
\]

Where:

- \(C_{\text{VOHAP,avg}}\) = Average concentration of VOHAP for the source test in ppmv as measured by Method 18 in 40 CFR part 60, appendix A or the average concentration of TGNMO for the source test in ppmv as hexane as measured by Method 25 in 40 CFR part 60, appendix A; and
- \(C_{\text{CEM}}\) = Average concentration of total hydrocarbons in ppmv as hexane as measured using the CEMS during the source test.

(3) For two or more exhaust streams from one or more automated conveyor and pallet cooling lines or automated shakeout lines, compute the flow-weighted average concentration of VOHAP emissions for each combination of exhaust streams using Equation 5 of this section:

\[
C_w = \frac{\sum \text{C}_i Q_i}{\sum Q_i} \quad (\text{Eq. 5})
\]

Where:

- \(C_w\) = Flow-weighted concentration of VOHAP or VOC, ppmv (as hexane);
- \(C_i\) = Concentration of VOHAP or VOC from exhaust stream “i”, ppmv (as hexane);
- \(n\) = Number of exhaust streams sampled; and
- \(Q_i\) = Volumetric flow rate of effluent gas from exhaust stream “i,” dscfm.

(g) To determine compliance with the emissions limit or standard in § 63.7690(a)(11) for a TEA cold box mold or core making line, follow the test methods in 40 CFR part 60, appendix A, specified in paragraphs (g)(1) through (4) of this section.

(1) Determine the TEA concentration for each test run according to the test methods in 40 CFR part 60, appendix A that are specified in paragraphs (g)(1)(i) through (v) of this section.

(i) Method 1 or 1A to select sampling port locations and the number of traverse points in each stack or duct. If you elect to meet the 99 percent reduction standard, sampling sites must be located both at the inlet to the control device and at the outlet of the control device prior to any releases to the atmosphere. If you elect to meet the concentration limit, the sampling site must be located at the outlet of the control device (or at the outlet of the emissions source if no control device is present) prior to any releases to the atmosphere.

(ii) Method 2, 2A, 2C, 2D, 2F, or 2G to determine the volumetric flow rate of the stack gas.

(iii) Method 3, 3A, or 3B to determine the dry molecular weight of the stack gas.
(iv) Method 4 to determine the moisture content of the stack gas.

(v) Method 18 to determine the TEA concentration. Alternatively, you may use NIOSH Method 2010 (incorporated by reference—see § 63.14) to determine the TEA concentration provided the performance requirements outlined in section 13.1 of EPA Method 18 are satisfied. The sampling option and time must be sufficiently long such that either the TEA concentration in the field sample is at least 5 times the limit of detection for the analytical method or the test results calculated using the laboratory's reported analytical detection limit for the specific field samples are less than 1/10 of the applicable emissions limit. When using Method 18, the adsorbent tube approach, as described in section 8.2.4 of Method 18, may be required to achieve the necessary analytical detection limits. The sampling time must be at least 1 hour in all cases.

(2) If you use a wet acid scrubber, conduct the test as soon as practicable after adding fresh acid solution and the system has reached normal operating conditions.

(3) If you use a wet acid scrubber that is subject to the operating limit in § 63.7690(b)(5)(ii) for pH level, determine the pH of the scrubber blowdown using the procedures in paragraph (g)(3)(i) or (ii) of this section.

(i) Measure the pH of the scrubber blowdown with the CPMS required in § 63.7740(f)(2) during each TEA sampling run in intervals of no more than 15 minutes. Determine and record the 3-hour average; or

(ii) Measure and record the pH level using the probe and meter required in § 63.7740(f)(2) once each sampling run. Determine and record the average pH level for the three runs.

(4) If you are subject to the 99 percent reduction standard, calculate the mass emissions reduction using Equation 6 of this section:

\[
\% \text{ reduction} = \left( \frac{E_i - E_o}{E_i} \right) \times 100\% \quad (\text{Eq. 6})
\]

Where:

\( E_i \) = Mass emissions rate of TEA at control device inlet, kilograms per hour (kg/hr); and

\( E_o \) = Mass emissions rate of TEA at control device outlet, kg/hr.

(h) To determine compliance with the PM or total metal HAP emissions limits in § 63.7690(a)(1) through (6) when one or more regulated emissions sources are combined with either another regulated emissions source subject to a different emissions limit or other non-regulated emissions sources, you may demonstrate compliance using one of the procedures in paragraphs (h)(1) through (3) of this section.

(1) Meet the most stringent applicable emissions limit for the regulated emissions sources included in the combined emissions stream.

(2) Use the procedures in paragraphs (h)(2)(i) through (iii) of this section.

(i) Determine the volumetric flow rate of the individual regulated streams for which emissions limits apply.

(ii) Calculate the flow-weighted average emissions limit, considering only the regulated streams, using Equation 5 of this section, except \( C_w \) is the flow-weighted average emissions limit for PM or total metal HAP in the exhaust stream, gr/dscf; and \( C_i \) is the concentration of PM or total metal HAP in exhaust stream “i”, gr/dscf.

(iii) Meet the calculated flow-weighted average emissions limit for the regulated emissions sources included in the combined emissions stream for the combined emissions stream.

(3) Use the procedures in paragraphs (h)(3)(i) through (iii) of this section.
(i) Determine the PM or total metal HAP concentration of each of the regulated streams prior to the combination with other exhaust streams or control device.

(ii) Measure the flow rate and PM or total metal HAP concentration of the combined exhaust stream both before and after the control device and calculate the mass removal efficiency of the control device using Equation 6 of this section, except $E_i$ is the mass emissions rate of PM or total metal HAP at the control device inlet, lb/hr and $E_o$ is the mass emissions rate of PM or total metal HAP at the control device outlet, lb/hr.

(iii) Meet the applicable emissions limit based on the calculated PM or total metal HAP concentration for the regulated emissions sources using Equation 7 of this section:

$$C_{\text{released}} = C_i \times \left(1 - \frac{\% \text{ reduction}}{100}\right) \quad \text{(Eq. 7)}$$

Where:

- $C_{\text{released}}$ = Calculated concentration of PM (or total metal HAP) predicted to be released to the atmosphere from the regulated emissions source, gr/dscf;
- $C_i$ = Concentration of PM (or total metal HAP) in the uncontrolled regulated exhaust stream, gr/dscf.

(i) To determine compliance with an emissions limit for situations when multiple sources are controlled by a single control device, but only one source operates at a time, or other situations that are not expressly considered in paragraphs (b) through (h) of this section, a site-specific test plan should be submitted to the Administrator for approval according to the requirements in § 63.7(c)(2) and (3).


§ 63.7733 What procedures must I use to establish operating limits?

(a) For each capture system subject to operating limits in § 63.7690(b)(1)(ii), you must establish site-specific operating limits in your operation and maintenance plan according to the procedures in paragraphs (a)(1) through (3) of this section.

(1) Concurrent with applicable emissions and opacity tests, measure and record values for each of the operating limit parameters in your capture system operation and maintenance plan according to the monitoring requirements in § 63.7740(a).

(2) For any dampers that are manually set and remain at the same position at all times the capture system is operating, the damper position must be visually checked and recorded at the beginning and end of each run.

(3) Review and record the monitoring data. Identify and explain any times the capture system operated outside the applicable operating limits.

(b) For each wet scrubber subject to the operating limits in § 63.7690(b)(2) for pressure drop and scrubber water flow rate, you must establish site-specific operating limits according to the procedures specified in paragraphs (b)(1) and (2) of this section.

(1) Using the CPMS required in § 63.7740(c), measure and record the pressure drop and scrubber water flow rate in intervals of no more than 15 minutes during each PM test run.

(2) Compute and record the average pressure drop and average scrubber water flow rate for each valid sampling run in which the applicable emissions limit is met.
(c) For each combustion device applied to emissions from a scrap preheater or TEA cold box mold or core making line subject to the operating limit in §63.7690(b)(4) for combustion zone temperature, you must establish a site-specific operating limit according to the procedures specified in paragraphs (c)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(e), measure and record the combustion zone temperature during each sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average combustion zone temperature for each valid sampling run in which the applicable emissions limit is met.

(d) For each acid wet scrubber subject to the operating limit in §63.7690(b)(5), you must establish a site-specific operating limit for scrubbing liquid flow rate according to the procedures specified in paragraphs (d)(1) and (2) of this section.

(1) Using the CPMS required in §63.7740(f), measure and record the scrubbing liquid flow rate during each TEA sampling run in intervals of no more than 15 minutes.

(2) Compute and record the average scrubbing liquid flow rate for each valid sampling run in which the applicable emissions limit is met.

(e) You may change the operating limits for a capture system, wet scrubber, acid wet scrubber, or combustion device if you meet the requirements in paragraphs (e)(1) through (3) of this section.

(1) Submit a written notification to the Administrator of your request to conduct a new performance test to revise the operating limit.

(2) Conduct a performance test to demonstrate compliance with the applicable emissions limitation in §63.7690.

(3) Establish revised operating limits according to the applicable procedures in paragraphs (a) through (d) of this section.

(f) You may use a previous performance test (conducted since December 22, 2002) to establish an operating limit provided the test meets the requirements of this subpart.


§63.7734 How do I demonstrate initial compliance with the emissions limitations that apply to me?

(a) You have demonstrated initial compliance with the emissions limits in §63.7690(a) by meeting the applicable conditions in paragraphs (a)(1) through (11) of this section. When alternative emissions limitations are provided for a given emissions source, you are not restricted in the selection of which applicable alternative emissions limitation is used to demonstrate compliance.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.005 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(c), did not exceed 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in §63.7732(b), did not exceed 0.006 gr/dscf; or
(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(c), did not exceed 0.0005 gr/dscf; or

(iii) The average PM mass emissions rate, determined according to the performance test procedures in § 63.7732(b), did not exceed 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) The average total metal HAP mass emissions rate, determined according to the performance test procedures in § 63.7732(c), did not exceed 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.

(3) For each cupola metal melting furnace or electric arc metal melting furnace at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(c), did not exceed 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(b), did not exceed 0.001 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(c), did not exceed 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in § 63.7732(b), did not exceed 0.010 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(c), did not exceed 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry,

(i) The average PM concentration in the exhaust stream, measured according to the performance test procedures in § 63.7732(b), did not exceed 0.002 gr/dscf; or

(ii) The average total metal HAP concentration in the exhaust stream, determined according to the performance test procedures in § 63.7732(c), did not exceed 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, the opacity of fugitive emissions from foundry operations discharged to the atmosphere, determined according to the performance test procedures in § 63.7732(d), did not exceed 20 percent (6-minute average), except for one 6-minute average per hour that did not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, the average VOHAP concentration, determined according to the performance test procedures in § 63.7732(e), did not exceed 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing iron and steel foundry that does not meet the work practice standards in § 63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not meet the work practice standard in § 63.7700(f), the average VOHAP concentration determined according to the performance test procedures in § 63.7732(e), did not exceed 20 ppmv.
(10) For one or more automated conveyor and pallet cooling lines that use a sand mold system or automated shakeout lines that use a sand mold system at a new foundry,

(i) You have reduced the data from the CEMS to 3-hour averages according to the performance test procedures in § 63.7732(f)(1) or (2); and

(ii) The 3-hour flow-weighted average VOHAP concentration, measured according to the performance test procedures in § 63.7332(f)(1) or (2), did not exceed 20 ppmv.

(11) For each TEA cold box mold or core making line in a new or existing iron and steel foundry, the average TEA concentration, determined according to the performance test procedures in § 63.7732(g), did not exceed 1 ppmv or was reduced by 99 percent.

(b) You have demonstrated initial compliance with the operating limits in § 63.7690(b) if:

(1) For each capture system subject to the operating limit in § 63.7690(b)(1)(ii),

(i) You have established appropriate site-specific operating limits in your operation and maintenance plan according to the requirements in § 63.7710(b); and

(ii) You have a record of the operating parameter data measured during the performance test in accordance with § 63.7733(a); and

(2) For each wet scrubber subject to the operating limits in § 63.7690(b)(2) for pressure drop and scrubber water flow rate, you have established appropriate site-specific operating limits and have a record of the pressure drop and scrubber water flow rate measured during the performance test in accordance with § 63.7733(b).

(3) For each combustion device subject to the operating limit in § 63.7690(b)(3) for combustion zone temperature, you have a record of the combustion zone temperature measured during the performance test in accordance with § 63.7732(e)(4).

(4) For each combustion device subject to the operating limit in § 63.7690(b)(4) for combustion zone temperature, you have established appropriate site-specific operating limits and have a record of the combustion zone temperature measured during the performance test in accordance with § 63.7733(c).

(5) For each acid wet scrubber subject to the operating limits in § 63.7690(b)(5) for scrubbing liquid flow rate and scrubber blowdown pH,

(i) You have established appropriate site-specific operating limits for the scrubbing liquid flow rate and have a record of the scrubbing liquid flow rate measured during the performance test in accordance with § 63.7733(d); and

(ii) You have a record of the pH of the scrubbing liquid blowdown measured during the performance test in accordance with § 63.7732(g)(3).


§ 63.7735 How do I demonstrate initial compliance with the work practice standards that apply to me?

(a) For each iron and steel foundry subject to the certification requirement in § 63.7700(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that: "At all times, your foundry will purchase and use only metal ingots, pig iron, slitter, or other materials that do not include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics, or free organic liquids."

(b) For each iron and steel foundry subject to the requirements in § 63.7700(c) for a scrap inspection and selection plan, you have demonstrated initial compliance if you have certified in your notification of compliance status that:
(1) You have submitted a written plan to the Administrator for approval according to the requirements in § 63.7700(c); and

(2) You will operate at all times according to the plan requirements.

c) For each furan warm box mold or core making line in a new or existing foundry subject to the work practice standard in § 63.7700(d), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You will meet the no methanol requirement for the catalyst portion of each binder chemical formulation; and

(2) You have records documenting your certification of compliance, such as a material safety data sheet (provided that it contains appropriate information), a certified product data sheet, or a manufacturer's hazardous air pollutant data sheet, onsite and available for inspection.

d) For each scrap preheater at an existing iron and steel foundry subject to the work practice standard in § 63.7700(e)(1) or (2), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have installed a gas-fired preheater where the flame directly contacts the scrap charged, you will operate and maintain each gas-fired scrap preheater such that the flame directly contacts the scrap charged, and you have records documenting your certification of compliance that are onsite and available for inspection; or

(2) You will charge only material that is subject to and in compliance with the scrap certification requirements in § 63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.

e) For each scrap preheater at a new iron and steel foundry subject to the work practice standard in § 63.7700(f), you have demonstrated initial compliance if you have certified in your notification of compliance status that you will charge only material that is subject to and in compliance with the scrap certification requirements in § 63.7700(b) and you have records documenting your certification of compliance that are onsite and available for inspection.


§ 63.7736 How do I demonstrate initial compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system subject to an operating limit in § 63.7690(b), you have demonstrated initial compliance if you have met the conditions in paragraphs (a)(1) and (2) of this section.

(1) You have certified in your notification of compliance status that:

(i) You have submitted the capture system operation and maintenance plan to the Administrator for approval according to the requirements of § 63.7710(b); and

(ii) You will inspect, operate, and maintain each capture system according to the procedures in the plan.

(2) You have certified in your performance test report that the system operated during the test at the operating limits established in your operation and maintenance plan.

(b) For each control device subject to an operating limit in § 63.7690(b), you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the control device operation and maintenance plan to the Administrator for approval according to the requirements of § 63.7710(b); and
(2) You will inspect, operate, and maintain each control device according to the procedures in the plan.

(c) For each bag leak detection system, you have demonstrated initial compliance if you have certified in your notification of compliance status that:

(1) You have submitted the bag leak detection system monitoring information to the Administrator within the written O&M plan for approval according to the requirements of § 63.7710(b);

(2) You will inspect, operate, and maintain each bag leak detection system according to the procedures in the plan; and

(3) You will follow the corrective action procedures for bag leak detection system alarms according to the requirements in the plan.

(d) For each pouring area and pouring station in a new or existing foundry, you have demonstrated initial compliance if you have certified in your notification of compliance status report that:

(1) You have submitted the mold vent ignition plan to the Administrator for approval according to the requirements in § 63.7710(b); and

(2) You will follow the procedures for igniting mold vent gases according to the requirements in the plan.


Continuous Compliance Requirements

§ 63.7740 What are my monitoring requirements?

(a) For each capture system subject to an operating limit in § 63.7690(b)(1), you must install, operate, and maintain a CPMS according to the requirements in § 63.7741(a) and the requirements in paragraphs (a)(1) and (2) of this section.

(1) If you use a flow measurement device to monitor the operating limit parameter, you must at all times monitor the hourly average rate (e.g., the hourly average actual volumetric flow rate through each separately ducted hood or the average hourly total volumetric flow rate at the inlet to the control device).

(2) Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS. If dampers are not manually set and remain in the same position, you must make a visual check at least once every 24 hours to verify that each damper for the capture system is in the same position as during the initial performance test.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must at all times monitor the relative change in PM loadings using a bag leak detection system according to the requirements in § 63.7741(b).

(c) For each baghouse, regardless of type, that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must conduct inspections at their specified frequencies according to the requirements specified in paragraphs (c)(1) through (8) of this section.

(1) Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.

(2) Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.

(3) Check the compressed air supply for pulse-jet baghouses each day.
(4) Monitor cleaning cycles to ensure proper operation using an appropriate methodology.

(5) Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.

(6) Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or lying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices.

(7) Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.

(8) Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

(d) For each wet scrubber subject to the operating limits in § 63.7690(b)(2), you must at all times monitor the 3-hour average pressure drop and scrubber water flow rate using CPMS according to the requirements in § 63.7741(c).

(e) For each combustion device subject to the operating limit in § 63.7690(b)(3), you must at all times monitor the 15-minute average combustion zone temperature using a CPMS according to the requirements of § 63.7741(d).

(f) For each combustion device subject to the operating limit in § 63.7690(b)(4), you must at all times monitor the 3-hour average combustion zone temperature using CPMS according to the requirements in § 63.7741(d).

(g) For each wet acid scrubber subject to the operating limits in § 63.7690(b)(5),

(1) You must at all times monitor the 3-hour average scrubbing liquid flow rate using CPMS according to the requirements of § 63.7741(e)(1); and

(2) You must at all times monitor the 3-hour average pH of the scrubber blowdown using CPMS according to the requirements in § 63.7741(e)(2) or measure and record the pH of the scrubber blowdown once per production cycle using a pH probe and meter according to the requirements in § 63.7741(e)(3).

(h) For one or more automated conveyor and pallet cooling lines and automated shakeout lines at a new iron and steel foundry subject to the VOHAP emissions limit in § 63.7690(a)(10), you must at all times monitor the 3-hour average VOHAP concentration using a CEMS according to the requirements of § 63.7741(g).


§ 63.7741 What are the installation, operation, and maintenance requirements for my monitors?

(a) For each capture system subject to an operating limit in § 63.7690(b)(1), you must install, operate, and maintain each CPMS according to the requirements in paragraphs (a)(1) through (3) of this section.

(1) If you use a flow measurement device to monitor an operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(1)(i) through (iv) of this section.

(i) Locate the flow sensor and other necessary equipment such as straightening vanes in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually.
(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) If you use a pressure measurement device to monitor the operating limit parameter for a capture system, you must meet the requirements in paragraphs (a)(2)(i) through (vi) of this section.

(i) Locate the pressure sensor(s) in or as close as possible to a position that provides a representative measurement of the pressure and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a "non-clogging" pressure tap is used, check for pluggage monthly.

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer’s specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) Record the results of each inspection, calibration, and validation check.

(b) For each negative pressure baghouse or positive pressure baghouse equipped with a stack that is applied to meet any PM or total metal HAP emissions limitation in this subpart, you must install, operate, and maintain a bag leak detection system according to the requirements in paragraphs (b)(1) through (7) of this section.

(1) The system must be certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic meter (0.0044 grains per actual cubic foot) or less.

(2) The bag leak detection system sensor must provide output of relative particulate matter loadings and the owner or operator shall continuously record the output from the bag leak detection system using electronic or other means (e.g., using a strip chart recorder or a data logger).

(3) The system must be equipped with an alarm that will sound when an increase in relative particulate loadings is detected over the alarm set point established in the operation and maintenance plan, and the alarm must be located such that it can be heard by the appropriate plant personnel.

(4) The initial adjustment of the system must, at minimum, consist of establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device, and establishing the alarm set points and the alarm delay time (if applicable).

(5) Following the initial adjustment, do not adjust the sensitivity or range, averaging period, alarm set point, or alarm delay time without approval from the Administrator. Except, once per quarter, you may adjust the sensitivity of the bag leak detection system to account for seasonable effects including temperature and humidity according to the procedures in the operation and maintenance plan required by § 63.7710(b).

(6) For negative pressure, induced air baghouses, and positive pressure baghouses that are discharged to the atmosphere through a stack, the bag leak detector sensor must be installed downstream of the baghouse and upstream of any wet scrubber.

(7) Where multiple detectors are required, the system’s instrumentation and alarm may be shared among detectors.
(c) For each wet scrubber subject to the operating limits in § 63.7690(b)(2), you must install and maintain CPMS to measure and record the pressure drop and scrubber water flow rate according to the requirements in paragraphs (c)(1) and (2) of this section.

(1) For each CPMS for pressure drop you must:

(i) Locate the pressure sensor in or as close as possible to a position that provides a representative measurement of the pressure drop and that minimizes or eliminates pulsating pressure, vibration, and internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.5 inch of water or a transducer with a minimum measurement sensitivity of 1 percent of the pressure range.

(iii) Check the pressure tap for pluggage daily. If a “non-clogging” pressure tap is used, check for pluggage monthly.

(iv) Using a manometer or equivalent device such as a magnahelic or other pressure indicating transmitter, check gauge and transducer calibration quarterly.

(v) Conduct calibration checks any time the sensor exceeds the manufacturer’s specified maximum operating pressure range, or install a new pressure sensor.

(vi) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(2) For each CPMS for scrubber liquid flow rate, you must:

(i) Locate the flow sensor and other necessary equipment in a position that provides a representative flow and that reduces swirling flow or abnormal velocity distributions due to upstream and downstream disturbances.

(ii) Use a flow sensor with a minimum measurement sensitivity of 2 percent of the flow rate.

(iii) Conduct a flow sensor calibration check at least semiannually according to the manufacturer’s instructions.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(d) For each combustion device subject to the operating limit in § 63.7690(b)(3) or (4), you must install and maintain a CPMS to measure and record the combustion zone temperature according to the requirements in paragraphs (d)(1) through (8) of this section.

(1) Locate the temperature sensor in a position that provides a representative temperature.

(2) For a noncryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 0.75 percent of the temperature value, whichever is larger.

(3) For a cryogenic temperature range, use a temperature sensor with a minimum tolerance of 2.2 °C or 2 percent of the temperature value, whichever is larger.

(4) Shield the temperature sensor system from electromagnetic interference and chemical contaminants.

(5) If you use a chart recorder, it must have a sensitivity in the minor division of at least 20 °F.

(6) Perform an electronic calibration at least semiannually according to the procedures in the manufacturer’s owners manual. Following the electronic calibration, conduct a temperature sensor validation check, in which a second or redundant temperature sensor placed nearby the process temperature sensor must yield a reading within 16.7 °C of the process temperature sensor’s reading.
(7) Conduct calibration and validation checks any time the sensor exceeds the manufacturer's specified maximum operating temperature range, or install a new temperature sensor.

(8) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(e) For each wet acid scrubber subject to the operating limits in § 63.7690(b)(5), you must:

(1) Install and maintain CPMS to measure and record the scrubbing liquid flow rate according to the requirements in paragraph (c)(2) of this section; and

(2) Install and maintain CPMS to measure and record the pH of the scrubber blowdown according to the requirements in paragraph (e)(2)(i) through (iv) of this section.

(i) Locate the pH sensor in a position that provides a representative measurement of the pH and that minimizes or eliminates internal and external corrosion.

(ii) Use a gauge with a minimum measurement sensitivity of 0.1 pH or a transducer with a minimum measurement sensitivity of 5 percent of the pH range.

(iii) Check gauge calibration quarterly and transducer calibration monthly using a manual pH gauge.

(iv) At least monthly, visually inspect all components, including all electrical and mechanical connections, for proper functioning.

(3) As an alternative to the CPMS required in paragraph (e)(2) of this section, you may use a pH probe to extract a sample for analysis by a pH meter that meets the requirements in paragraphs (e)(3)(i) through (iii) of this section.

(i) The pH meter must have a range of at least 1 to 5 or more;

(ii) The pH meter must have an accuracy of ±0.1; and

(iii) The pH meter must have a resolution of at least 0.1 pH.

(f) You must operate each CPMS used to meet the requirements of this subpart according to the requirements specified in paragraphs (f)(1) through (3) of this section.

(1) Each CPMS must complete a minimum of one cycle of operation for each successive 15-minute period. You must have a minimum of three of the required four data points to constitute a valid hour of data.

(2) Each CPMS must have valid hourly data for 100 percent of every averaging period.

(3) Each CPMS must determine and record the hourly average of all recorded readings and the 3-hour average of all recorded readings.

(g) For each automated conveyor and pallet cooling line and automated shakeout line at a new iron and steel foundry subject to the VOHAP emissions limit in § 63.7690(a)(10), you must install, operate, and maintain a CEMS to measure and record the concentration of VOHAP emissions according to the requirements in paragraphs (g)(1) through (3) of this section.

(1) You must install, operate, and maintain each CEMS according to Performance Specification 8 in 40 CFR part 60, appendix B.

(2) You must conduct a performance evaluation of each CEMS according to the requirements of § 63.8 and Performance Specification 8 in 40 CFR part 60, appendix B.
(3) You must operate each CEMS according to the requirements specified in paragraph (g)(3)(i) through (iv) of this section.

(i) As specified in § 63.8(c)(4)(ii), each CEMS must complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period.

(ii) You must reduce CEMS data as specified in § 63.8(g)(2).

(iii) Each CEMS must determine and record the 3-hour average emissions using all the hourly averages collected for periods during which the CEMS is not out-of-control.

(iv) Record the results of each inspection, calibration, and validation check.


§ 63.7742 How do I monitor and collect data to demonstrate continuous compliance?

(a) Except for monitoring malfunctions, associated repairs, and required quality assurance or control activities (including as applicable, calibration checks and required zero and span adjustments), you must monitor continuously (or collect data at all required intervals) any time a source of emissions is operating.

(b) You may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emissions or operating levels or to fulfill a minimum data availability requirement, if applicable. You must use all the data collected during all other periods in assessing compliance.

(c) A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

§ 63.7743 How do I demonstrate continuous compliance with the emissions limitations that apply to me?

(a) You must demonstrate continuous compliance by meeting the applicable conditions in paragraphs (a)(1) through (12) of this section. When alternative emissions limitations are provided for a given emissions source, you must comply with the alternative emissions limitation most recently selected as your compliance alternative.

(1) For each electric arc metal melting furnace, electric induction metal melting furnace, or scrap preheater at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.005 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0004 gr/dscf.

(2) For each cupola metal melting furnace at an existing iron and steel foundry,

(i) Maintaining the average PM concentration in the exhaust stream at or below 0.006 gr/dscf; or

(ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0005 gr/dscf; or

(iii) Maintaining the average PM mass emissions rate at or below 0.10 pound of PM per ton (lb/ton) of metal charged; or

(iv) Maintaining the average total metal HAP mass emissions rate at or below 0.008 pound of total metal HAP per ton (lb/ton) of metal charged.
(3) For each cupola metal melting furnace or electric arc metal melting furnace at new iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or (ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(4) For each electric induction metal melting furnace or scrap preheater at a new iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.001 gr/dscf; or (ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.00008 gr/dscf.

(5) For each pouring station at an existing iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.010 gr/dscf; or (ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0008 gr/dscf.

(6) For each pouring area or pouring station at a new iron and steel foundry, (i) Maintaining the average PM concentration in the exhaust stream at or below 0.002 gr/dscf; or (ii) Maintaining the average total metal HAP concentration in the exhaust stream at or below 0.0002 gr/dscf.

(7) For each building or structure housing any iron and steel foundry emissions source at the iron and steel foundry, maintaining the opacity of any fugitive emissions from foundry operations discharged to the atmosphere at or below 20 percent opacity (6-minute average), except for one 6-minute average per hour that does not exceed 27 percent opacity.

(8) For each cupola metal melting furnace at a new or existing iron and steel foundry, maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv corrected to 10 percent oxygen.

(9) For each scrap preheater at an existing new iron and steel foundry that does not comply with the work practice standard in § 63.7700(e)(1) or (2) and for each scrap preheater at a new iron and steel foundry that does not comply with the work practice standard in § 63.7700(f), maintaining the average VOHAP concentration in the exhaust stream at or below 20 ppmv.

(10) For one or more automated conveyor and pallet cooling lines or automated shakeout lines that use a sand mold system at a new iron and steel foundry, (i) Maintaining the 3-hour flow-weighted average VOHAP concentration in the exhaust stream at or below 20 ppmv; (ii) Inspecting and maintaining each CEMS according to the requirements of § 63.7741(g) and recording all information needed to document conformance with these requirements; and (iii) Collecting and reducing monitoring data for according to the requirements of § 63.7741(g) and recording all information needed to document conformance with these requirements.

(11) For each TEA cold box mold or core making line at a new or existing iron and steel foundry, maintaining a 99 percent reduction in the VOHAP concentration in the exhaust stream or maintaining the average VOHAP concentration in the exhaust stream at or below 1 ppmv.

(12) Conducting subsequent performance tests at least every 5 years for each emissions source subject to an emissions limit for PM, total metal HAP, VOHAP, or TEA in § 63.7690(a) and subsequent performance tests at least every 6 months for each building or structure subject to the opacity limit in § 63.7690(a)(7).
(b) You must demonstrate continuous compliance for each capture system subject to an operating limit in § 63.7690(b)(1) by meeting the requirements in paragraphs (b)(1) and (2) of this section.

(1) Operating the capture system at or above the lowest values or settings established for the operating limits in your operation and maintenance plan; and

(2) Monitoring the capture system according to the requirements in § 63.7740(a) and collecting, reducing, and recording the monitoring data for each of the operating limit parameters according to the applicable requirements in this subpart.

(c) For each baghouse,

(1) Inspecting and maintaining each baghouse according to the requirements of § 63.7740(c)(1) through (8) and recording all information needed to document conformance with these requirements; and

(2) If the baghouse is equipped with a bag leak detection system, maintaining records of the times the bag leak detection system sounded, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which corrective action was completed.

(d) For each wet scrubber that is subject to the operating limits in § 63.7690(b)(2), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average pressure drop and 3-hour average scrubber water flow rate at levels no lower than those established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of § 63.7741(c) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for pressure drop and scrubber water flow rate according to the requirements of § 63.7741(f) and recording all information needed to document conformance with these requirements.

(e) For each combustion device that is subject to the operating limit in § 63.7690(b)(3), you must demonstrate continuous compliance by:

(1) Maintaining the 15-minute average combustion zone temperature at a level no lower than 1,300 °F;

(2) Inspecting and maintaining each CPMS according to the requirements of § 63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of § 63.7741(f) and recording all information needed to document conformance with these requirements.

(f) For each combustion device that is subject to the operating limit in § 63.7690(b)(4), you must demonstrate continuous compliance by:

(1) Maintaining the 3-hour average combustion zone temperature at a level no lower that established during the initial or subsequent performance test;

(2) Inspecting and maintaining each CPMS according to the requirements of § 63.7741(d) and recording all information needed to document conformance with these requirements; and

(3) Collecting and reducing monitoring data for combustion zone temperature according to the requirements of § 63.7741(f) and recording all information needed to document conformance with these requirements.
(g) For each acid wet scrubber subject to the operating limits in § 63.7690(b)(5), you must demonstrate continuous compliance by:

1. Maintaining the 3-hour average scrubbing liquid flow rate at a level no lower than the level established during the initial or subsequent performance test;

2. Maintaining the 3-hour average pH of the scrubber blowdown at a level no higher than 4.5 (if measured by a CPMS) or maintaining the pH level of the scrubber blowdown during each production shift no higher than 4.5;

3. Inspecting and maintaining each CPMS according to the requirements of § 63.7741(e) and recording all information needed to document conformance with these requirements; and

4. Collecting and reducing monitoring data for scrubbing liquid flow rate and scrubber blowdown pH according to the requirements of § 63.7741(f) and recording all information needed to document conformance with these requirements. If the pH level of the scrubber blowdown is measured by a probe and meter, you must demonstrate continuous compliance by maintaining records that document the date, time, and results of each sample taken for each production shift.


§ 63.7744 How do I demonstrate continuous compliance with the work practice standards that apply to me?

(a) You must maintain records that document continuous compliance with the certification requirements in § 63.7700(b) or with the procedures in your scrap selection and inspection plan required in § 63.7700(c). Your records documenting compliance with the scrap selection and inspection plan must include a copy (kept onsite) of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.

(b) You must keep records of the chemical composition of all catalyst binder formulations applied in each furan warm box mold or core making line at a new or existing iron and steel foundry to demonstrate continuous compliance with the requirements in § 63.7700(d).

(c) For a scrap preheater at an existing iron and steel foundry, you must operate and maintain each gas-fired preheater such that the flame directly contacts the scrap charged to demonstrate continuous compliance with the requirement § 63.7700(e)(1). If you choose to meet the work practice standard in § 63.7700(e)(2), you must keep records to document that the scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in § 63.7700(b).

(d) For a scrap preheater at a new iron and steel foundry, you must keep records to document that each scrap preheater charges only material that is subject to and in compliance with the scrap certification requirements in § 63.7700(b) to demonstrate continuous compliance with the requirement in § 63.7700(f).

§ 63.7745 How do I demonstrate continuous compliance with the operation and maintenance requirements that apply to me?

(a) For each capture system and control device for an emissions source subject to an emissions limit in § 63.7690(a), you must demonstrate continuous compliance with the operation and maintenance requirements of § 63.7710 by:

1. Making monthly inspections of capture systems and initiating corrective action according to § 63.7710(b)(1) and recording all information needed to document conformance with these requirements;

2. Performing preventative maintenance for each control device according to the preventive maintenance plan required by § 63.7710(b)(3) and recording all information needed to document conformance with these requirements;

3. Operating and maintaining each bag leak detection system according to the site-specific monitoring plan required by § 63.7710(b)(4) and recording all information needed to demonstrate conformance with these requirements;
(4) Initiating and completing corrective action for a bag leak detection system alarm according to the corrective action plan required by § 63.7710(b)(5) and recording all information needed to document conformance with these requirements; and

(5) Igniting gases from mold vents according to the procedures in the plan required by § 63.7710(b)(6). (Any instance where you fail to follow the procedures is a deviation that must be included in your semiannual compliance report.)

(b) You must maintain a current copy of the operation and maintenance plans required by § 63.7710(b) onsite and available for inspection upon request. You must keep the plans for the life of the iron and steel foundry or until the iron and steel foundry is no longer subject to the requirements of this subpart.

§ 63.7746 What other requirements must I meet to demonstrate continuous compliance?

(a) Deviations. You must report each instance in which you did not meet each emissions limitation in § 63.7690 (including each operating limit) that applies to you. This requirement includes periods of startup, shutdown, and malfunction. You also must report each instance in which you did not meet each work practice standard in § 63.7700 and each operation and maintenance requirement of § 63.7710 that applies to you. These instances are deviations from the emissions limitations, work practice standards, and operation and maintenance requirements in this subpart. These deviations must be reported according to the requirements of § 63.7751.

(b) Startups, shutdowns, and malfunctions. (1) Consistent with the requirements of §§ 63.6(e) and 63.7(e)(1), deviations that occur during a period of startup, shutdown, or malfunction are not violations if you demonstrate to the Administrator's satisfaction that you were operating in accordance with § 63.6(e)(1).

(2) The Administrator will determine whether deviations that occur during a period of startup, shutdown, or malfunction are violations according to the provisions in § 63.6(e).


§ 63.7747 How do I apply for alternative monitoring requirements for a continuous emissions monitoring system?

(a) You may request an alternative monitoring method to demonstrate compliance with the VOHAP emissions limits in § 63.7690(a)(10) for automated pallet cooling lines or automated shakeout lines at a new iron and steel foundry according to the procedures in this section.

(b) You can request approval to use an alternative monitoring method in the notification of construction or reconstruction for new sources, or at any time.

(c) You must submit a monitoring plan that includes a description of the control technique or pollution prevention technique, a description of the continuous monitoring system or method including appropriate operating parameters that will be monitored, test results demonstrating compliance with the emissions limit, operating limit(s) (if applicable) determined according to the test results, and the frequency of measuring and recording to establish continuous compliance. If applicable, you must also include operation and maintenance requirements for the monitors.

(d) The monitoring plan is subject to approval by the Administrator. Use of the alternative monitoring method must not begin until approval is granted by the Administrator.

Notifications, Reports, and Records

§ 63.7750 What notifications must I submit and when?

(a) You must submit all of the notifications required by §§ 63.6(h)(4) and (5), 63.7(b) and (c); 63.8(e); 63.8(f)(4) and (6); 63.9(b) through (h) that apply to you by the specified dates.
(b) As specified in § 63.9(b)(2), if you start up your iron and steel foundry before April 22, 2004, you must submit your initial notification no later than August 20, 2004.

(c) If you start up your new iron and steel foundry on or after April 22, 2004, you must submit your initial notification no later than 120 calendar days after you become subject to this subpart.

(d) If you are required to conduct a performance test, you must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by § 63.7(b)(1).

(e) If you are required to conduct a performance test or other initial compliance demonstration, you must submit a notification of compliance status according to the requirements of § 63.9(h)(2)(ii). For opacity performance tests, the notification of compliance status may be submitted with the semiannual compliance report in § 63.7751(a) and (b) or the semiannual part 70 monitoring report in § 63.7551(d).

1. For each initial compliance demonstration that does not include a performance test, you must submit the notification of compliance status before the close of business on the 30th calendar day following completion of the initial compliance demonstration.

2. For each initial compliance demonstration that does include a performance test, you must submit the notification of compliance status, including the performance test results, before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in § 63.10(d)(2).


§ 63.7751 What reports must I submit and when?

(a) Compliance report due dates. Unless the Administrator has approved a different schedule, you must submit a semiannual compliance report to your permitting authority according to the requirements specified in paragraphs (a)(1) through (5) of this section.

1. The first compliance report must cover the period beginning on the compliance date that is specified for your iron and steel foundry by § 63.7683 and ending on June 30 or December 31, whichever date comes first after the compliance date that is specified for your iron and steel foundry.

2. The first compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after your first compliance report is due.

3. Each subsequent compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.

4. Each subsequent compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date comes first after the end of the semiannual reporting period.

5. For each iron and steel foundry that is subject to permitting regulations pursuant to 40 CFR part 70 or 40 CFR part 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), you may submit the first and subsequent compliance reports according to the dates the permitting authority has established instead of the dates specified in paragraphs (a)(1) through (4) of this section.

(b) Compliance report contents. Each compliance report must include the information specified in paragraphs (b)(1) through (3) of this section and, as applicable, paragraphs (b)(4) through (8) of this section.

1. Company name and address.
(2) Statement by a responsible official, with that official's name, title, and signature, certifying the truth, accuracy, and completeness of the content of the report.

(3) Date of report and beginning and ending dates of the reporting period.

(4) If you had a startup, shutdown, or malfunction during the reporting period and you took action consistent with your startup, shutdown, and malfunction plan, the compliance report must include the information in § 63.10(d)(5)(i).

(5) If there were no deviations from any emissions limitations (including operating limit), work practice standards, or operation and maintenance requirements, a statement that there were no deviations from the emissions limitations, work practice standards, or operation and maintenance requirements during the reporting period.

(6) If there were no periods during which a continuous monitoring system (including a CPMS or CEMS) was out-of-control as specified by § 63.8(c)(7), a statement that there were no periods during which the CPMS was out-of-control during the reporting period.

(7) For each deviation from an emissions limitation (including an operating limit) that occurs at an iron and steel foundry for which you are not using a continuous monitoring system (including a CPMS or CEMS) to comply with an emissions limitation or work practice standard required in this subpart, the compliance report must contain the information specified in paragraphs (b)(1) through (4) and (b)(7)(i) and (ii) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The total operating time of each emissions source during the reporting period.

(ii) Information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.

(8) For each deviation from an emissions limitation (including an operating limit) or work practice standard occurring at an iron and steel foundry where you are using a continuous monitoring system (including a CPMS or CEMS) to comply with the emissions limitation or work practice standard in this subpart, you must include the information specified in paragraphs (b)(1) through (4) and (b)(8)(i) through (xi) of this section. This requirement includes periods of startup, shutdown, and malfunction.

(i) The date and time that each malfunction started and stopped.

(ii) The date and time that each continuous monitoring system was inoperative, except for zero (low-level) and high-level checks.

(iii) The date, time, and duration that each continuous monitoring system was out-of-control, including the information in § 63.8(c)(8).

(iv) The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(v) A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period.

(vi) A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.

(vii) A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system downtime as a percent of the total source operating time during the reporting period.

(viii) A brief description of the process units.
(ix) A brief description of the continuous monitoring system.

(x) The date of the latest continuous monitoring system certification or audit.

(xi) A description of any changes in continuous monitoring systems, processes, or controls since the last reporting period.

(c) Immediate startup, shutdown, and malfunction report. If you had a startup, shutdown, or malfunction during the semiannual reporting period that was not consistent with your startup, shutdown, and malfunction plan and the source exceeds any applicable emissions limitation in § 63.7690, you must submit an immediate startup, shutdown, and malfunction report according to the requirements of § 63.10(d)(5)(ii).

(d) Part 70 monitoring report. If you have obtained a title V operating permit for an iron and steel foundry pursuant to 40 CFR part 70 or 40 CFR part 71, you must report all deviations as defined in this subpart in the semiannual monitoring report required by 40 CFR 70.6(a)(3)(ii)(A) or 40 CFR 71.6(a)(3)(ii)(A). If you submit a compliance report for an iron and steel foundry along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(ii)(A) or 40 CFR 71.6(a)(3)(ii)(A), and the compliance report includes all the required information concerning deviations from any emissions limitation or operation and maintenance requirement in this subpart, submission of the compliance report satisfies any obligation to report the same deviations in the semiannual monitoring report. However, submission of a compliance report does not otherwise affect any obligation you may have to report deviations from permit requirements for an iron and steel foundry to your permitting authority.


§ 63.7752  What records must I keep?

(a) You must keep the records specified in paragraphs (a)(1) through (4) of this section:

(1) A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status that you submitted, according to the requirements of § 63.10(b)(2)(xiv).

(2) The records specified in § 63.6(e)(3)(iii) through (v) related to startup, shutdown, and malfunction.

(3) Records of performance tests and performance evaluations as required by § 63.10(b)(2)(viii).

(4) Records of the annual quantity of each chemical binder or coating material used to coat or make molds and cores, the Material Data Safety Sheet or other documentation that provides the chemical composition of each component, and the annual quantity of HAP used in these chemical binder or coating materials at the foundry as calculated from the recorded quantities and chemical compositions (from Material Data Safety Sheets or other documentation).

(b) You must keep the following records for each CEMS.

(1) Records described in § 63.10(b)(2)(vi) through (xi).

(2) Previous (i.e., superseded) versions of the performance evaluation plan as required in § 63.8(d)(3).

(3) Request for alternatives to relative accuracy tests for CEMS as required in § 63.8(f)(6)(i).

(4) Records of the date and time that each deviation started and stopped, and whether the deviation occurred during a period of startup, shutdown, or malfunction or during another period.

(c) You must keep the records required by §§ 63.7743, 63.7744, and 63.7745 to show continuous compliance with each emissions limitation, work practice standard, and operation and maintenance requirement that applies to you.

§ 63.7753  In what form and for how long must I keep my records?

(a) You must keep your records in a form suitable and readily available for expeditious review, according to the requirements of § 63.10(b)(1).

(b) As specified in § 63.10(b)(1), you must keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record.

(c) You must keep each record onsite for at least 2 years after the date of each occurrence, measurement, maintenance, corrective action, report, or record according to the requirements in § 63.10(b)(1). You can keep the records for the previous 3 years offsite.

Other Requirements and Information

§ 63.7760  What parts of the General Provisions apply to me?

Table 1 to this subpart shows which parts of the General Provisions in §§ 63.1 through 63.15 apply to you.

§ 63.7761  Who implements and enforces this subpart?

(a) This subpart can be implemented and enforced by us, the U.S. Environmental Protection Agency (EPA), or a delegated authority such as your State, local, or tribal agency. If the U.S. EPA Administrator has delegated authority to your State, local, or tribal agency, then that agency, in addition to the U.S. EPA, has the authority to implement and enforce this subpart. You should contact your U.S. EPA Regional Office to find out if implementation and enforcement of this subpart is delegated to your State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under 40 CFR part 63, subpart E, the authorities contained in paragraph (c) of this section are retained by the Administrator of the U.S. EPA and are not transferred to the State, local, or tribal agency.

(c) The authorities that cannot be delegated to State, local, or tribal agencies are specified in paragraphs (c)(1) through (4) of this section.

(1) Approval of alternatives to non-opacity emissions limitations in § 63.7690 and work practice standards in § 63.7700 under § 63.6(g).

(2) Approval of major alternatives to test methods under § 63.7(e)(2)(ii) and (f) and as defined in § 63.90.

(3) Approval of major alternatives to monitoring under § 63.8(f) and as defined in § 63.90.

(4) Approval of major alternatives to recordkeeping and reporting under § 63.10(f) and as defined in § 63.90.

Definitions

§ 63.7765  What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act (CAA), in § 63.2, and in this section.

Automated conveyor and pallet cooling line means any dedicated conveyor line or area used for cooling molds received from pouring stations.

Automated shakeout line means any mechanical process unit designed for and dedicated to separating a casting from a mold. These mechanical processes include, but are not limited to, shaker decks, rotary separators, and high-frequency vibration units. Automated shakeout lines do not include manual processes for separating a casting from a mold, such as personnel using a hammer, chisel, pick ax, sledge hammer, or jackhammer.
Bag leak detection system means a system that is capable of continuously monitoring relative particulate matter (dust) loadings in the exhaust of a baghouse to detect bag leaks and other upset conditions. A bag leak detection system includes, but is not limited to, an instrument that operates on triboelectric, electrodynamic, light scattering, light transmittance, or other effect to continuously monitor relative particulate matter loadings.

Binder chemical means a component of a system of chemicals used to bind sand together into molds, mold sections, and cores through chemical reaction as opposed to pressure.

Capture system means the collection of components used to capture gases and fumes released from one or more emissions points and then convey the captured gas stream to a control device or to the atmosphere. A capture system may include, but is not limited to, the following components as applicable to a given capture system design: duct intake devices, hoods, enclosures, ductwork, dampers, manifolds, plenums, and fans.

Cold box mold or core making line means a mold or core making line in which the formed aggregate is hardened by catalysis with a gas.

Combustion device means an afterburner, thermal incinerator, or scrap preheater.

Conveyance means the system of equipment that is designed to capture pollutants at the source, convey them through ductwork, and exhaust them using forced ventilation. A conveyance may, but does not necessarily include, control equipment designed to reduce emissions of the pollutants. Emissions that are released through windows, vents, or other general building ventilation or exhaust systems are not considered to be discharged through a conveyance.

Cooling means the process of molten metal solidification within the mold and subsequent temperature reduction prior to shakeout.

Cupola means a vertical cylindrical shaft furnace that uses coke and forms of iron and steel such as scrap and foundry returns as the primary charge components and melts the iron and steel through combustion of the coke by a forced upward flow of heated air.

Deviation means any instance in which an affected source or an owner or operator of such an affected source:

1. Fails to meet any requirement or obligation established by this subpart including, but not limited to, any emissions limitation (including operating limits), work practice standard, or operation and maintenance requirement;

2. Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any iron and steel foundry required to obtain such a permit; or

3. Fails to meet any emissions limitation (including operating limits) or work practice standard in this subpart during startup, shutdown, or malfunction, regardless of whether or not such failure is permitted by this subpart.

A deviation is not always a violation. The determination of whether a deviation constitutes a violation of the standard is up to the discretion of the entity responsible for enforcement of the standards.

Electric arc furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted through resistance heating by an electric current flowing through the arcs formed between the electrodes and the surface of the metal and also flowing through the metal between the arc paths.

Electric induction furnace means a vessel in which forms of iron and steel such as scrap and foundry returns are melted though resistance heating by an electric current that is induced in the metal by passing an alternating current through a coil surrounding the metal charge or surrounding a pool of molten metal at the bottom of the vessel.

Emissions limitation means any emissions limit or operating limit.

Exhaust stream means gases emitted from a process through a conveyance as defined in this subpart.
Free organic liquids means material that fails the paint filter test by EPA Method 9095A (incorporated by reference—see § 63.14). That is, if any portion of the material passes through and drops from the filter within the 5-minute test period, the material contains free liquids.

Fresh acid solution means a sulfuric acid solution used for the control of triethylamine emissions that has a pH of 2.0 or less.

Fugitive emissions means any pollutant released to the atmosphere that is not discharged through a conveyance as defined in this subpart.

Furan warm box mold or core making line means a mold or core making line in which the binder chemical system used is that system commonly designated as a furan warm box system by the foundry industry.

Hazardous air pollutant means any substance on the list originally established in 112(b)(1) of the CAA and subsequently amended as published in the Code of Federal Regulations.

Iron and steel foundry means a facility or portion of a facility that melts scrap, ingot, and/or other forms of iron and/or steel and pours the resulting molten metal into molds to produce final or near final shape products for introduction into commerce. Research and development facilities and operations that only produce non-commercial castings are not included in this definition.

Metal melting furnace means a cupola, electric arc furnace, or electric induction furnace that converts scrap, foundry returns, and/or other solid forms of iron and/or steel to a liquid state. This definition does not include a holding furnace, an argon oxygen decarburization vessel, or ladle that receives molten metal from a metal melting furnace, to which metal ingots or other material may be added to adjust the metal chemistry.

Mold or core making line means the collection of equipment that is used to mix an aggregate of sand and binder chemicals, form the aggregate into final shape, and harden the formed aggregate. This definition does not include a line for making green sand molds or cores.

Mold vent means an intentional opening in a mold through which gases containing pyrolysis products of organic mold and core constituents produced by contact with or proximity to molten metal normally escape the mold during and after metal pouring.

Off blast means those periods of cupola operation when the cupola is not actively being used to produce molten metal. Off blast conditions include cupola startup when air is introduced to the cupola to preheat the sand bed and other cupola startup procedures as defined in the startup, shutdown, and malfunction plan. Off blast conditions also include idling conditions when the blast air is turned off or down to the point that the cupola does not produce additional molten metal.

On blast means those periods of cupola operation when combustion (blast) air is introduced to the cupola furnace and the furnace is capable of producing molten metal. On blast conditions are characterized by both blast air introduction and molten metal production.

Pouring area means an area, generally associated with floor and pit molding operations, in which molten metal is brought to each individual mold. Pouring areas include all pouring operations that do not meet the definition of a pouring station.

Pouring station means the fixed location to which molds are brought in a continuous or semicontinuous manner to receive molten metal, after which the molds are moved to a cooling area.

Responsible official means responsible official as defined in § 63.2.

Scrap preheater means a vessel or other piece of equipment in which metal scrap that is to be used as melting furnace feed is heated to a temperature high enough to eliminate volatile impurities or other tramp materials by direct flame heating or similar means of heating. Scrap dryers, which solely remove moisture from metal scrap, are not considered to be scrap preheaters for purposes of this subpart.
Scrubber blowdown means liquor or slurry discharged from a wet scrubber that is either removed as a waste stream or processed to remove impurities or adjust its composition or pH before being returned to the scrubber.

Total metal HAP means, for the purposes of this subpart, the sum of the concentrations of antimony, arsenic, beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium as measured by EPA Method 29 (40 CFR part 60, appendix A). Only the measured concentration of the listed analytes that are present at concentrations exceeding one-half the quantitation limit of the analytical method are to be used in the sum. If any of the analytes are not detected or are detected at concentrations less than one-half the quantitation limit of the analytical method, the concentration of those analytes will be assumed to be zero for the purposes of calculating the total metal HAP for this subpart.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the CAA.


Table 1 to Subpart EEEEEE of Part 63—Applicability of General Provisions to Subpart EEEEEE

[As stated in § 63.7760, you must meet each requirement in the following table that applies to you.]

<table>
<thead>
<tr>
<th>Citation</th>
<th>Subject</th>
<th>Applies to Subpart EEEEEE?</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>63.1</td>
<td>Applicability</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.2</td>
<td>Definitions</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.3</td>
<td>Units and abbreviations</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.4</td>
<td>Prohibited activities</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.5</td>
<td>Construction/reconstruction</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.6(a)-(g)</td>
<td>Compliance with standards and maintenance requirements</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.6(h)</td>
<td>Opacity and visible emissions standards</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.6(i)-(j)</td>
<td>Compliance extension and Presidential compliance exemption</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.7(a)(1)-(a)(2)</td>
<td>Applicability and performance test dates</td>
<td>No</td>
<td>Subpart EEEEEE specifies applicability and performance test dates.</td>
</tr>
<tr>
<td>63.7(a)(3), (b)-(h)</td>
<td>Performance testing requirements</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.8(a)(1)-(a)(3), (b), (c)(1)-(c)(3), (c)(6)-(c)(8), (d), (e), (f)(1)-(f)(6), (g)(1)-(g)(4)</td>
<td>Monitoring requirements</td>
<td>Yes</td>
<td>Subpart EEEEEE specifies requirements for alternative monitoring systems.</td>
</tr>
<tr>
<td>63.8(a)(4)</td>
<td>Additional monitoring requirements for control devices in § 63.11</td>
<td>No</td>
<td>Subpart EEEEEE does not require flares.</td>
</tr>
<tr>
<td>63.8(c)(4)</td>
<td>Continuous monitoring system (CMS) requirements</td>
<td>No</td>
<td>Subpart EEEEEE specifies requirements for operation of CMS and CEMS.</td>
</tr>
<tr>
<td>63.8(c)(5)</td>
<td>Continuous opacity monitoring system (COMS) Minimum Procedures</td>
<td>No</td>
<td>Subpart EEEEEE does not require COMS.</td>
</tr>
<tr>
<td>63.8(g)(5)</td>
<td>Data reduction</td>
<td>No</td>
<td>Subpart EEEEEE specifies data reduction requirements.</td>
</tr>
<tr>
<td>Citation</td>
<td>Subject</td>
<td>Applies to Subpart EEEEEE?</td>
<td>Explanation</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>63.9</td>
<td>Notification requirements</td>
<td>Yes</td>
<td>Except: for opacity performance tests, Subpart EEEEEE allows the notification of compliance status to be submitted with the semiannual compliance report or the semiannual part 70 monitoring report.</td>
</tr>
<tr>
<td>63.10(a)-(b), (c)(1)-(6), (c)(9)-(15), (d)(1)-(2), (e)(1)-(2), (f)</td>
<td>Recordkeeping and reporting requirements</td>
<td>Yes</td>
<td>Additional records for CMS in § 63.10(c)(1)-(6), (9)-(15) apply only to CEMS.</td>
</tr>
<tr>
<td>63.10(c)(7)-(8)</td>
<td>Records of excess emissions and parameter monitoring exceedances for CMS</td>
<td>No</td>
<td>Subpart EEEEEE specifies records requirements.</td>
</tr>
<tr>
<td>63.10(d)(3)</td>
<td>Reporting opacity or visible emissions observations</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.10(e)(3)</td>
<td>Excess emissions reports</td>
<td>No</td>
<td>Subpart EEEEEE specifies reporting requirements.</td>
</tr>
<tr>
<td>63.10(e)(4)</td>
<td>Reporting COMS data</td>
<td>No</td>
<td>Subpart EEEEEE data does not require COMS.</td>
</tr>
<tr>
<td>63.11</td>
<td>Control device requirements</td>
<td>No</td>
<td>Subpart EEEEEE does not require flares.</td>
</tr>
<tr>
<td>63.12</td>
<td>State authority and delegations</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>63.13-63.15</td>
<td>Addresses of State air pollution control agencies and EPA regional offices. Incorporation by reference. Availability of information and confidentiality</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 Significant Source Modification and Significant Permit Modification

<table>
<thead>
<tr>
<th>Source Description and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source Name:</strong> Kingsbury Castings Division</td>
</tr>
<tr>
<td><strong>Source Location:</strong> 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345</td>
</tr>
<tr>
<td><strong>County:</strong> LaPorte</td>
</tr>
<tr>
<td><strong>SIC Code:</strong> 3321 (Gray and Ductile Iron Foundries)</td>
</tr>
<tr>
<td><strong>Operation Permit No.:</strong> T 091-40374-00078</td>
</tr>
<tr>
<td><strong>Operation Permit Issuance Date:</strong> May 30, 2019</td>
</tr>
<tr>
<td><strong>Significant Source Modification No.:</strong> 091-41459-00078</td>
</tr>
<tr>
<td><strong>Significant Permit Modification No.:</strong> 091-41648-00078</td>
</tr>
<tr>
<td><strong>Permit Reviewer:</strong> Ethan Horvath</td>
</tr>
</tbody>
</table>

**Existing Approvals**

The source was issued Part 70 Operating Permit Renewal No. 091-40374-00078 on May 30, 2019. There have been no subsequent approvals issued.

**County Attainment Status**

The source is located in LaPorte County.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO2</td>
<td>Better than national standards.</td>
</tr>
<tr>
<td>CO</td>
<td>Unclassifiable or attainment effective November 15, 1990.</td>
</tr>
<tr>
<td>O₃</td>
<td>Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.¹</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Unclassifiable or attainment effective April 5, 2005, for the annual PM₂.₅ standard.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>Unclassifiable effective November 15, 1990.</td>
</tr>
<tr>
<td>NO₂</td>
<td>Cannot be classified or better than national standards.</td>
</tr>
<tr>
<td>Pb</td>
<td>Unclassifiable or attainment effective December 31, 2011.</td>
</tr>
</tbody>
</table>

¹Unclassifiable or attainment effective November 15, 1990, for the 1-hour standard which was revoked effective June 15, 2005

**Ozone Standards**

Volatile organic compounds (VOC) and Nitrogen Oxides (NOₓ) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOₓ emissions are considered when evaluating the rule applicability relating to ozone. LaPorte County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOₓ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

**PM₂.₅**

LaPorte County has been classified as attainment for PM₂.₅. Therefore, direct PM₂.₅, SO₂, and NOₓ emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
(c) Other Criteria Pollutants

LaPorte County has been classified as attainment or unclassifiable in Indiana for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

Since this source is classified as a grey and ductile iron foundry, it is considered one (1) of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B). Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

The fugitive emissions of hazardous air pollutants (HAP) are counted toward the determination of Part 70 Permit applicability and source status under Section 112 of the Clean Air Act (CAA).

Greenhouse Gas (GHG) Emissions

On June 23, 2014, in the case of Utility Air Regulatory Group v. EPA, cause no. 12-1146, (available at http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court’s decision. U.S. EPA's guidance states that U.S. EPA will no longer require PSD or Title V permits for sources “previously classified as ‘Major’ based solely on greenhouse gas emissions.”

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

Source Status - Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

<table>
<thead>
<tr>
<th>Source-Wide Emissions Prior to Modification (ton/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM(^1)</td>
</tr>
<tr>
<td>-------------------------------------------------------</td>
</tr>
<tr>
<td>Total PTE of Entire Source Including Fugitives*</td>
</tr>
<tr>
<td>Title V Major Source Thresholds</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
</tr>
</tbody>
</table>

1Under the Part 70 Permit program (40 CFR 70), PM\(_{10}\) and PM\(_{2.5}\), not particulate matter (PM), are each considered as a "regulated air pollutant."

2PM\(_{2.5}\) listed is direct PM\(_{2.5}\).

3Single highest source-wide HAP

*Fugitive HAP emissions are always included in the source-wide emissions.
(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutants, PM, PM10, PM2.5, and CO, are each emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).

(b) This existing source is not a major source of HAP, as defined in 40 CFR 63.2, because HAP emissions are less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

(c) These emissions are based on the TSD of Part 70 Operating Permit No. 091-40374-00078, issued on May 30, 2019.

Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed an application, submitted by Kingsbury Castings Division on May 17, 2019, relating to the following:

(a) This source has an existing Sand Handling Operation (1970) consisting of the following portions:

(1) Mold Sand Handling Operation,
(2) Core Sand Handling Operation, and
(3) Spent Sand Handling Operation.

This application is to modify the existing Sand Handling Operation (1970) by adding a new Mold Sand Handling Operation (Molding Sand Handling System) that will eventually replace the existing Mold Sand Handling portion of the Sand Handling Operation. The Mold Sand Handling Operation (Molding Sand Handling System) will retain the same nominal capacity. There will be a transition period that both Mold Sand Handling Operations will be operating, however the existing Mold Sand Handling Operation will be required to be removed or decommissioned within 180 days of initial startup of the new Mold Sand Handling Operation (Molding Sand Handling System).

The Core Sand Handling and Spent Sand Handling portions of the Sand Handling Operation (1970) are not being modified or replaced.

The new Mold Sand Handling portion of the Sand Handling Operation consists of the following:

(1) One (1) Mold Sand Handling Operation, identified as Molding Sand Handling System, with a maximum throughput of 5.45 tons of sand per hour, with six (6) existing bin vent filters as controls (K7, K8, K9, K10, K11, and K12), exhausting indoors, and consisting of the following:

(A) One (1) Pneumatic Conveyor Transporter, identified as CONVEY-1, approved in 2019 for construction, and with a maximum throughput of 20,000 pounds of sand per hour;

(B) Nine (9) Receiving Bins, identified as MOLD BIN -1 through MOLD BIN -9, approved in 2019 for construction, using Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9) as controls, and each with a maximum capacity of 3.0 tons of sand;

(C) One (1) Mold Sand Elevator, identified as ELEV-4, approved in 2019 for construction, and equipped with diverter values to direct sand to the tanks;

(D) One (1) Lump-breaker, identified as LUMP-3, and approved in 2019 for construction; and
(E) Two (2) 110-ton Molding Sand Tanks, approved in 2019 for construction, and using a powered bin vent (MOLD BIN VENT-10) as control.

Controls:

(a) The existing Spent Sand Handling Operation (conveyors, magnets, screener, elevator, surge tank, auger, and pneumatic conveyor) is currently controlled by one (1) existing Dust Collector (K13). Two (2) Bin Vent Filters (K5 and K6) control the two (2) Spent Sand Tanks, each.

There are no changes in these controls for this modification.

(b) The existing Core Sand Handling System (60-ton Sand Tank, Elevator, Lump-breaker, Diverters, Pneumatic Conveyor, and three (3) Receiving Bins) is controlled by Bin Vent Filters (K15, K16, and K17).

There are no changes in these controls for this modification.

(c) The existing Mold Sand Handling Operation (Molding Sand Handling System) is controlled by six (6) Bin Vent Filters (K7, K8, K9, K10, K11, and K12).

The new Mold Sand Handling Operation will be controlled by Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9).

Baghouse K13 no longer exhausts indoors and will now only exhaust to the atmosphere.

This new Mold Sand Handling Operation (Molding Sand Handling System) will also utilize the following emissions units and controls that are a part of the existing Sand Handling Operation (1970):

(1) One (1) Spent Sand Tank, identified as SST1, constructed in 1970;

(2) One (1) Spent Sand Tank, identified as SST2, constructed in 2012; and

(3) Fork lifts.

To add two (2) Shell Molding Machines:

(1) Two (2) Shell Molding Machines, identified as MOL017 and MOL018, approved in 2019 for construction, each with a maximum capacity of 700.0 pounds per hour of pre-coating sand, 33.25 pounds per hour of binder, and a maximum heat input capacity 1.0 MMBtu/hr, using a release agent with no VOC, using no controls, and exhausting through stacks 13, 14, 17, 15, 16, 24, and 26.

To remove four (4) Shell Molding Machines:

(1) Four (4) Shell Molding Machines, using a release agent with no VOC, utilizing no control and exhausting through stacks 13, 14, 17, 15, 16, 24, and 26, consisting of the following:
Mold Machines ID | Construction Date | Natural Gas-fired Heater Maximum Capacity (MMBTU/hr) | Maximum Capacity of Pre-coated Sand (lbs/hr) | Maximum Capacity of Binder (lbs/hr)
--- | --- | --- | --- | ---
MOL017 | 1995 | 1.0 | 700 | 33.25
MOL018 | 1995 | 1.0 | 700 | 33.25
MOL019 | 1995 | 1.0 | 700 | 33.25
MOL020 | 1995 | 1.0 | 700 | 33.25

Note: The source was originally permitted for twenty (20) Shell Molding Machines, however, four (4) of the units (MOL017 through MOL020) were not constructed prior to this modification.

### Enforcement Issues

There are no pending enforcement actions related to this modification.

### Emission Calculations

See Appendix A of this Technical Support Document for detailed emission calculations.

### Permit Level Determination – Part 70 Modification to an Existing Source

Pursuant to 326 IAC 2-1.1-1(12), Potential to Emit is defined as “the maximum capacity of a stationary source or emission 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, IDEM, or the appropriate local air pollution control agency.”

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5. This table reflects the PTE before controls. If the control equipment has been determined to be integral, the table reflects the potential to emit (PTE) after consideration of the integral control device.

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
<th>Single HAP$^2$</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Handling Operation (Molding Sand Handling System)</td>
<td>85.94</td>
<td>12.89</td>
<td>12.89</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Shell Molding Machines (MOL017 and MOL018)</td>
<td>2.68</td>
<td>2.68</td>
<td>0.00</td>
<td>0.00</td>
<td>0.74</td>
<td>0.00</td>
<td>0.00</td>
<td>0.55 (Phenol)</td>
<td>0.55</td>
</tr>
<tr>
<td>Natural Gas Combustion (MOL017 and MOL018)</td>
<td>0.02</td>
<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.86</td>
<td>0.05</td>
<td>0.72</td>
<td>0.02 (Hexane)</td>
<td>0.02</td>
</tr>
<tr>
<td>Total PTE Before Controls of the New Emission Units:</td>
<td>88.64</td>
<td>15.64</td>
<td>15.64</td>
<td>0.01</td>
<td>0.86</td>
<td>0.79</td>
<td>0.72</td>
<td>0.55 (Phenol)</td>
<td>0.57</td>
</tr>
</tbody>
</table>

$^1$PM$_{2.5}$ listed is direct PM$_{2.5}$.

$^2$Single highest HAP.
(a) Approval to Construct

Pursuant to 326 IAC 2-7-10.5(g)(4), a Significant Source Modification is required because this modification has the potential to emit PM at greater than or equal to twenty-five (25) tons per year.

(b) Approval to Operate

Pursuant to 326 IAC 2-7-12(d)(1), this change to the permit is being made through a Significant Permit Modification because this modification does not qualify as a Minor Permit Modification or as an Administrative Amendment.

<table>
<thead>
<tr>
<th>Source-Wide Emissions After Issuance (ton/year)</th>
<th>PM1</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>Single HAP</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total PTE of Entire Source Including Fugitives*</td>
<td>114.81</td>
<td>103.59</td>
<td>98.67</td>
<td>0.35</td>
<td>18.07</td>
<td>35.65</td>
<td>313.95</td>
<td>2.67 (Total Aromatic Amines)</td>
<td>10.76</td>
</tr>
<tr>
<td>Title V Major Source Thresholds</td>
<td>NA</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

*Fugitive HAP emissions are always included in the source-wide emissions.

1Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant."
2PM2.5 listed is direct PM2.5.
3Single highest source-wide HAP

The source opted to take limits in order to render the requirements of 326 IAC 2-2 (PSD) not applicable to this source. See Technical Support Document (TSD) State Rule Applicability - Entire Source section, 326 IAC 2-2 (PSD) and 326 IAC 2-3 (Emission Offset) for more information regarding the limits.

(a) This existing major PSD stationary source will continue to be major under 326 IAC 2-2 because at least one pollutant, PM, PM10, and CO, has emissions equal to or greater than the PSD major source threshold.

(b) This existing area source of HAP will continue to be an area source of HAP, as defined in 40 CFR 63.2, because HAP emissions will continue to be less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA).
Federal Rule Applicability Determination

Due to the modification at this source, federal rule applicability has been reviewed as follows:

**New Source Performance Standards (NSPS):**

(a) The requirements of the Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db and 326 IAC 12, are not included in the permit for the Shell Mold Machines (MOL017 and MOL018), because the Shell Mold Machines (MOL017 and MOL018) are not steam generating units.

(b) The requirements of the Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc and 326 IAC 12, are not included in the permit for the Shell Mold Machines (MOL017 and MOL018), because the Shell Mold Machines (MOL017 and MOL018) are not steam generating units.

(c) There are no New Source Performance Standards (40 CFR Part 60) and 326 IAC 12 included in the permit for this proposed modification.

**National Emission Standards for Hazardous Air Pollutants (NESHAP):**

(a) This source is still subject to the National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources, 40 CFR 63, Subpart ZZZZZ, because it is an iron and steel foundry that is an area source of HAP emissions.

There are no changes in applicable requirements, since the Shell Mold Machines (MOL017 and MOL018) and Mold Sand Handling Operation (Molding Sand Handling System) being added in this modification have similar units already covered in the NESHAP.

(b) The requirements of the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD and 326 IAC 20-95 are not included in the permit for the Shell Mold Machines (MOL017 and MOL018), since the Shell Mold Machines (MOL017 and MOL018) are not located at a major source of HAP emissions.

(c) The requirements of the National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries, 40 CFR 63, Subpart EEEEE and 326 IAC 20-92 are not included in the permit for the Shell Mold Machines (MOL017 and MOL018) and Mold Sand Handling Operation (Molding Sand Handling System), since the Shell Mold Machines (MOL017 and MOL018) and Mold Sand Handling Operation (Molding Sand Handling System) are not located at a major source of HAP emissions.

(d) There are no other National Emission Standards for Hazardous Air Pollutants under 40 CFR 63, 326 IAC 14 and 326 IAC 20 included for this proposed modification.

**Compliance Assurance Monitoring (CAM):**

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the regulated pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant (or a surrogate thereof); and
uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

(b) Pursuant to 40 CFR 64.2(b)(1)(i), emission limitations or standards proposed after November 15, 1990 pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act are exempt from the requirements of CAM. Therefore, an evaluation was not conducted for any emission limitations or standards proposed after November 15, 1990 pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act.

The following table is used to identify the applicability of CAM to new and modified emission unit and each emission limitation or standard for a specified pollutant based on the criteria specified under 40 CFR 64.2:

<table>
<thead>
<tr>
<th>Emission Unit/Pollutant</th>
<th>Control Device</th>
<th>Applicable Emission Limitation</th>
<th>Uncontrolled PTE (tons/year)</th>
<th>Controlled PTE (tons/year)</th>
<th>CAM Applicable (Y/N)</th>
<th>Large Unit (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mold Sand Handling Operation/PM*</td>
<td>Bin Vent Filters</td>
<td>326 IAC 2-2</td>
<td>&lt;100</td>
<td>-</td>
<td>N2</td>
<td>-</td>
</tr>
<tr>
<td>Mold Sand Handling Operation/PM10/PM2.5</td>
<td>326 IAC 6-3-2</td>
<td>&lt;100</td>
<td>-</td>
<td>N1</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Uncontrolled PTE (tpy) and controlled PTE (tpy) are evaluated against the Major Source Threshold for each pollutant. Major Source Threshold for criteria pollutants (PM10, PM2.5, SO2, NOX, VOC and CO) is 100 tpy, for a single HAP ten (10) tpy, and for total HAPs twenty-five (25) tpy.

Under the Part 70 Permit program (40 CFR 70), PM is not a regulated pollutant.

PM* For limitations under 326 IAC 6-3-2, 326 IAC 6.5, and 326 IAC 6.8, IDEM OAQ uses PM as a surrogate for the regulated air pollutant PM10. Therefore, uncontrolled PTE and controlled PTE reflect the emissions of the regulated air pollutant PM10.

N1 CAM does not apply for PM10 and PM2.5 because the uncontrolled PTE of PM10 and PM2.5 are each less than the major source threshold.

N2 Under 326 IAC 2-2, PM is not a surrogate for a regulated air pollutant. Therefore, CAM does not apply to these emission units for the 326 IAC 2-2 PM limitation.

Controls: DC = Dust Collection System

Emission units without air pollution controls are not subject to CAM. Therefore, they are not listed.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM, are not applicable to any of the new units as part of this modification.

State Rule Applicability - Entire Source

Due to this modification, state rule applicability has been reviewed as follows:

326 IAC 2-2 (PSD) and 326 IAC 2-3 (Emission Offset)
PSD and Emission Offset applicability is discussed under the Permit Level Determination – PSD and Emission Offset section and the Permit Level Determination - PSD Emissions Increase of this document.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The provisions of 326 IAC 2-4.1 apply to any owner or operator who constructs or reconstructs a major source of hazardous air pollutants (HAP), as defined in 40 CFR 63.41, after July 27, 1997, unless the major source has been specifically regulated under or exempted from regulation under a NESHAP that was issued pursuant to Section 112(d), 112(h), or 112(j) of the Clean Air Act (CAA) and incorporated under 40 CFR 63. On and after June 29, 1998, 326 IAC 2-4.1 is intended to implement the requirements of Section 112(g)(2)(B) of the Clean Air Act (CAA).

The operation of this source will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.
326 IAC 2-6 (Emission Reporting)
Since this source is located in LaPorte County, and has a potential to emit VOC greater than or equal to twenty-five (25) tons per year, an emission statement covering the previous calendar year must be submitted by July 1 of each year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 2-7-6(5) (Annual Compliance Certification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certifications that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 5-1 (Opacity Limitations)
This source is subject to the opacity limitations specified in 326 IAC 5-1-2(1)

326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This source is not subject to the requirements of 326 IAC 6-5, because:

The following units were constructed before December 13, 1985:

(a) Truck Loading and Unloading,
(b) Spent Sand Tank (SST1),
(c) Nine (9) Sand Silos, and
(d) Paved and Unpaved Roads

The following units were constructed after December 13, 1985, however have potential fugitive particulate emissions of less than twenty-five (25) tons per year:

(a) Band Saw (BS1) and
(b) Spent Sand Tank (SST2)

326 IAC 6.5 (Particulate Matter Limitations Except Lake County)
Pursuant to 326 IAC 6.5-1-1(a), this source (located in LaPorte County) is not subject to the requirements of 326 IAC 6.5 because it is not located in one of the following counties: Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne.

326 IAC 6.8 (Particulate Matter Limitations for Lake County)
Pursuant to 326 IAC 6.8-1-1(a), this source (located in LaPorte County) is not subject to the requirements of 326 IAC 6.8 because it is not located in Lake County.
State Rule Applicability – Individual Facilities

Due to this modification, state rule applicability has been reviewed as follows:

**Mold Sand Handling Operation**

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

Pursuant to 326 IAC 6-3-1(a), the requirements of 326 IAC 6-3-2 are applicable to the Mold Sand Handling Operation (Molding Sand Handling System), since it is a manufacturing process not exempted from this rule under 326 IAC 6-3-1(b) and is not subject to a particulate matter limitation that is as stringent as or more stringent than the particulate limitation established in this rule as specified in 326 IAC 6-3-1(c).

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the Mold Sand Handling Operation (Molding Sand Handling System) shall not exceed 12.77 pounds per hour when operating at a process weight rate of 5.45 tons per hour. The pound per hour limitation was calculated with the following equation:

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

The Bin Vent Filters shall be in operation at all times the Mold Sand Handling Operation (Molding Sand Handling System) is in operation, in order to comply with this limit.

**Shell Mold Machines**

326 IAC 6-2-4 (Particulate Matter Emission Limitations for Sources of Indirect Heating)

Pursuant to 326 IAC 6-2-1(d), indirect heating facilities which received permit to construct after September 21, 1983 are subject to the requirements of 326 IAC 6-2-4.

The particulate matter emissions (Pt) shall be limited by the following equation:

\[ Pt = \frac{1.09}{Q^{0.26}} \]

Where:

\( Pt \) = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu).
\( Q \) = Total source maximum operating capacity rating in MMBtu/hr heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated or the nameplate capacity, whichever is specified in the facility’s permit application, except when some lower capacity is contained in the facility’s operation permit; in which case, the capacity specified in the operation.

<table>
<thead>
<tr>
<th>Indirect Heating Units Which Began Operation After September 21, 1983</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>Units Operating as of Renewal 091-40374-00078</td>
</tr>
</tbody>
</table>
Indirect Heating Units Which Began Operation After September 21, 1983

<table>
<thead>
<tr>
<th>Facility</th>
<th>Construction Date (Removal Date)</th>
<th>Operating Capacity (MMBtu/hr)</th>
<th>Q (MMBtu/hr)</th>
<th>Calculated Pt Limitation, Pt (lb/MMBtu)</th>
<th>Particulate Limitation, Pt (lb/MMBtu)</th>
<th>PM PTE based on AP-42 (lb/MMBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL017</td>
<td>2019*</td>
<td>2.00</td>
<td>39.39</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MOL018</td>
<td>2019*</td>
<td>2.00</td>
<td>39.39</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MOL019</td>
<td>2.00</td>
<td>39.39</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MOL020</td>
<td>2.00</td>
<td>39.39</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>MOL017</td>
<td>2019*</td>
<td>2.00</td>
<td>41.39</td>
<td>0.41</td>
<td>0.41</td>
<td>0.002</td>
</tr>
<tr>
<td>MOL018</td>
<td>2019*</td>
<td>2.00</td>
<td>41.39</td>
<td>0.41</td>
<td>0.41</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Where: Q = Includes the capacity (MMBtu/hr) of the new unit(s) and the capacities for those unit(s) which were in operation at the source at the time the new unit(s) was constructed.

Note: Emission units shown in strikethrough were subsequently removed from the source. The effect of removing these units on "Q" is shown in the year the boiler was removed.

* approved in 2019 for construction

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(14), the Shell Mold Machines (MOL017 and MOL018) are not subject to the requirements of 326 IAC 6-3, since each Shell Mold Machine (MOL017 and MOL018) has potential emissions less than five hundred fifty-one thousandths (0.551) pound per hour.

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Even though, the Shell Mold Machines (MOL017 and MOL018) were constructed after January 1, 1980, they are not subject to the requirements of 326 IAC 8-1-6 because they each have unlimited VOC potential emissions less than twenty-five (25) tons per year.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to assure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements 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.

(a) There are no new Compliance Determination Requirements applicable to this modification.

(b) There are no new Compliance Monitoring Requirements applicable to this modification.
Proposed Changes

As part of this permit approval, the permit may contain new or different permit conditions and some conditions from previously issued permits/approvals may have been corrected, changed, or removed. These corrections, changes, and removals may include Title I changes.

The following changes listed below are due to the proposed modification. Deleted language appears as strikethrough text and new language appears as bold text (these changes may include Title I changes):

1. IDEM, OAQ has added new units to the permit.
2. IDEM, OAQ has removed units from the permit.

Additional Changes

IDEM, OAQ made additional changes to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

1. IDEM, OAQ has removed requirements from Condition E.1.2, since the source is a small foundry and the permit requirements included applicability for large foundries.
2. IDEM, OAQ has made model updates to standard permit language in the Section D of the permit to help clarify the intent of these requirements.
3. IDEM, OAQ has removed Compliance Monitoring Requirements from the permit, since the Dust Collector (K13) no longer exhausts indoors due to OSHA requirements.
4. IDEM, OAQ updated unit IDs and control device information to help clarify the unit descriptions.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(14)]

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

(f) One (1) Sand Handling Operation, constructed in 1970, approved in 2019 for modification, with a maximum capacity of 5.45 tons of sand per hour, including the following: consisting of three (3) systems:

1. Core Sand Handling operation, constructed in 1970, consisting of:
   A. 60-ton Sand Tank
   B. Elevator,
   C. Lump-breaker,
   D. Diverters,
   E. Pneumatic Conveyor, and
   F. Three (3) Receiving Bins.

2. Spent Sand Handling operation, constructed in 1970, consisting of:
   A. Conveyors,
   B. Magnets,
(C) Screener,
(D) Elevator,
(E) Surge Tank,
(F) Auger,
(G) Pneumatic Conveyor,
(H) One (1) Spent Sand Tank (SST1), identified as SST1, constructed in 1970, and using a Bin Vent Filter (K5) as control, and
(I) One (1) Spent Sand Tank (SST2), identified as SST2, constructed in 2012, and using a Bin Vent Filter (K6) as control.

(3) Mold Sand Handling operation, constructed in 1970, consisting of:
(A) Conveyors,
(B) Elevator,
(C) Lump Breaker, and
(D) Molding Tanks.

(4) One (1) Mold Sand Handling Operation, identified as Molding Sand Handling System, with a maximum throughput of 5.45 tons of sand per hour, exhausting indoors or outdoors, and consisting of the following:
(A) One (1) Pneumatic Conveyor Transporter, identified as CONVEY-1, approved in 2019 for construction, and with a maximum throughput of 10.0 tons of sand per hour;
(B) Nine (9) Receiving Sand Bins, identified as MOLD BIN-1 though MOLD BIN-9, approved in 2019 for construction, each with a maximum capacity of 3.0 tons, and using Bin Vent Filters (MOLD BIN VENT-1 though MOLD BIN VENT-9) as control;
(C) One (1) Mold Sand Elevator, identified as ELEV-4, and approved in 2019 for construction;
(D) One (1) Lump Breaker, identified as LUMP-3, and approved in 2019 for construction;
(E) Two (2) 110-ton Molding Sand Tanks, approved in 2019 for construction and using a powered bin vent (MOLD BIN VENT-10) as control;
(H) Fork lifts;

The Spent Sand Handling Operation is controlled by one (1) existing dust collector (K13) that exhausts outdoors through Stack K13.
The existing Mold Sand Handling Operations are controlled by nine (9) bin vent filters (K7, K8, K9, K10, K11, K12, K15, K16, and K17), with the ability to exhaust inside or through stack K13.

The new Mold Sand Handling Operation will be controlled by Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9).

The Core Sand Handling Operation is controlled by three (3) Bin Vent Filters (K15, K16, and K17), and exhausting indoors.

K13 dust collector is a common control for the Spent Sand Handling Operation and the Automated Shakeout.

Mold Making

(n) **Twenty Eighteen (2018)** Shell Molding Machines, with a total combined maximum capacity of 43,882.34 tons of sand per year (5.01 tons of sand per hour), using a release agent with no VOC, utilizing no control and exhausting through stacks 13, 14, 17, 15, 16, 24, and 26, consisting of the following:

<table>
<thead>
<tr>
<th>Mold Machines ID</th>
<th>Construction Date</th>
<th>Natural Gas fired Heater maximum Capacity (MMBTU/hr)</th>
<th>Maximum Capacity of Pre-coated sand (lbs/hr)</th>
<th>Maximum Capacity of binder (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL01</td>
<td>1970</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL02</td>
<td>1970</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL03</td>
<td>1974</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL04</td>
<td>1974</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL05</td>
<td>1975</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL06</td>
<td>1978</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL07</td>
<td>1980</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL08</td>
<td>1983</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL09</td>
<td>1983</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL10</td>
<td>1986</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL11</td>
<td>1986</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL12</td>
<td>1992</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL13</td>
<td>1992</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL14</td>
<td>1993</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL15</td>
<td>1993</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL16</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL017</td>
<td>2019*</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL018</td>
<td>2019*</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL017</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL018</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL019</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
<tr>
<td>MOL020</td>
<td>1995</td>
<td>1.0</td>
<td>700</td>
<td>33.25</td>
</tr>
</tbody>
</table>

The total maximum capacity of the **twenty (20) eighteen (18)** shell molding machines is determined assuming a source-wide 1:1 sand-to-metal ratio.

The maximum capacity of the shell molding machines is based on the maximum amount of material used for the largest mold. There is historically 92% mold sand to 8% core sand.

* Approved in 2019 for construction

Core Making
(o) Twelve (12) Shell Core Machines, with a total combined maximum capacity of 3,815.86 tons of sand per year (0.44 tons of sand per hour), using a release agent with no VOC, utilizing no control and exhausting through stacks 18 and 30, consisting of the following:

<table>
<thead>
<tr>
<th>Shell Core Machines ID</th>
<th>Construction Date</th>
<th>Natural Gas fired Heater maximum Capacity (MMBTU/hr)</th>
<th>Maximum Capacity of Pre-coated sand (lbs/hr)</th>
<th>Maximum Capacity of binder (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>COR01</td>
<td>1974</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR02</td>
<td>1974</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR03</td>
<td>1979</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR04</td>
<td>1980</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR05</td>
<td>1983</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR06</td>
<td>1983</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR07</td>
<td>1999</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR08</td>
<td>1999</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR09</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR010</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR011</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
<tr>
<td>COR012</td>
<td>2006</td>
<td>0.22</td>
<td>225</td>
<td>10.69</td>
</tr>
</tbody>
</table>

The total maximum capacity of the twelve (12) shell core machines is determined assuming a source-wide 1:1 sand-to-metal ratio.

The capacity of the shell core machines is based on the maximum amount of material used for the largest mold. There is historically 92% mold sand to 8% core sand.

**Note:** These changes have been made to Sections D and E.

D.1.1 PSD Minor Limits [326 IAC 2-2]

... (j) The PM2.5 emissions from dust collector K13 (stack K13) shall not exceed 0.59 pound per ton of metal throughput.

K13 dust collector is a common control for the Sand Handling operation and the Automated Shakeout.

Compliance with these limits, combined with the following:

(i) Metal throughput limit to the two (2) electric induction furnaces in Condition D.1.1(a), and

(ii) Potential to emit PM, PM10, and PM2.5 from the 2012 and 2019 modifications, shall limit the PM, PM10, and PM2.5 emissions to less than 25, 15, and 10 tons per twelve (12) consecutive month period render the requirements of 326 IAC 2-2 (PSD) not applicable to the following modifications:

(i) 2006 modification, and

(ii) 2012 modification, and

(iii) **2019 modification.**

The 2006 modification is for the addition of following:

(i) 1 Automated Shakeout Unit,
(ii) 4 Shell Core Machines, and

(iii) 4 Shell Core Machine Ovens.

The 2012 modification is for the following:

(i) addition of a 60-ton Spent Sand Storage Tank,
(ii) addition of a Dust Collector,
(iii) addition of a 1 Belt Sander, and
(iv) re-evaluation of the K13 Baghouse limits.

The 2019 modification is for the following:

(i) addition of one (1) Mold Sand Handling Operation of the Sand Handling Operation, that will eventually replace the existing Mold Sand Handling Operation of the Sand Handling Operation.

(ii) addition of two (2) Mold Machines.

D.1.2 Prevention of Significant Deterioration (PSD) [326 IAC 2-2]

Pursuant to 326 IAC 2-2-1(tt) and in order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall remove or decommission the existing Mold Sand Handling Operation of the Sand Handling Operation, within 180 days from the initial startup of the new Mold Sand Handling Operation (Molding Sand Handling System).

D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

D.1.4 Particulate Matter (PM) [326 IAC 6-3-2(e)]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations, Work Practices and Control Technologies), the allowable PM emission rate from the below facilities shall not exceed the rates outlined below:

<table>
<thead>
<tr>
<th>Facility</th>
<th>P = Process Weight (tons/hr)</th>
<th>E = Allowable Emissions (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrap and Charge Handling including Scrap Charge Preheater (HEAT2)</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>(Two (2) electric induction furnaces (FRN03 and FRN04))</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>Magnesium treatment</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>Pouring and cooling (Power &amp; Free) (Total emission limit for both pouring and cooling)</td>
<td>9.90 (metal and sand)</td>
<td>19.05</td>
</tr>
<tr>
<td>Manual shakeout and degating</td>
<td>9.90 (metal and sand)</td>
<td>19.05</td>
</tr>
<tr>
<td>Automated shakeout machine</td>
<td>9.90 (metal and sand)</td>
<td>19.05</td>
</tr>
<tr>
<td>Shotblast Machine (WHE02)</td>
<td>4.95</td>
<td>11.97</td>
</tr>
<tr>
<td>Sand handling process</td>
<td>5.45</td>
<td>12.76</td>
</tr>
<tr>
<td><strong>Mold Sand Handling Operation of the Sand Handling Operation</strong></td>
<td><strong>5.45</strong></td>
<td><strong>12.76</strong></td>
</tr>
</tbody>
</table>
The pounds per hour PM limitations shall be calculated with the following equation:

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

\[ E = 4.10 \times P^{0.67} \]

where:
- \( E \) = rate of emission in pounds per hour; and
- \( P \) = process weight rate in tons per hour

D.1.6 Particulate Control

(a) In order to comply with Conditions D.1.1(h), D.1.1(i), D.1.1(j) and D.1.4:

(1) The Dust Collector (K13) for particulate control shall be in operation and control emissions from the Automated Shakeout Unit and spent Sand Handling Operation at all times the Automated Shakeout Unit and spent Sand Handling Operation are in operation.

D.1.7 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) K13

In order to demonstrate the compliance status with Conditions D.1.1(h), D.1.1(i), D.1.1(j), and D.1.3, the Permittee shall perform PM, PM10 and PM2.5 testing on the spent Sand Handling and Automated Shakeout Machine emissions at the outlet of the Dust Collector (K13) within five (5) years of the date of the most recent valid compliance demonstration. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee’s obligation with regard to the performance testing required by this condition. PM10 and PM2.5 includes filterable and condensable PM.

D.1.78 Visible Emissions Notations

(a) Daily visible emission notations of the Dust Collector K13 exhaust (Stack K13) shall be performed during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.

D.1.89 Parametric Monitoring

(a) K13

The Permittee shall record the pressure drop across the Dust Collector (K13) used in conjunction with the Sand Handling Operations and Automated Shakeout Unit, at least once per day when the sand handling operations and automated shakeout unit are in operation. When for any one reading, the pressure drop across the sand handling operations and automated shakeout unit are outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 1.0 and 7.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test.

The Permittee shall record the pressure drop across the Dust Collector (K1) used in conjunction with the Shotblast Machine, at least once per day when the Shotblast Machine. When for any one
reading, the pressure drop across the Shotblast Machine is outside the normal range the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 1.0 and 7.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test.

Section C – Response to Excursions and Exceedances contains the Permittee’s obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

D.1.910 Broken or Failed Bag Detection

D.1.4011 Record Keeping Requirements

(b) In order to document the compliance status with Condition D.1.2, the Permittee shall keep records of when the existing Mold Sand Handling Operation has been removed or decommissioned.

(bc) To document the compliance status with Condition D.1.8, the Permittee shall maintain daily records of the visible emission notations Dust Collector exhaust (K13). The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of a visible emission notation (e.g., the process did not operate that day).

(cd) To document the compliance status with Condition D.1.9, the Permittee shall maintain daily records of the pressure drop across the Dust Collector K1. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g., the process did not operate that day).

(de) Section C - General Record Keeping Requirements contains the Permittee’s obligations with regard to the records required by this condition.

D.1.4112 Reporting Requirements

E.1.2 National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources NESHAP [40 CFR Part 63, Subpart ZZZZZ]

The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZZ (included as Attachment A to the operating permit), for the emission units listed above:

(1)  40 CFR 63.10880(a), (b)(1), (c), and (f)
(2)  40 CFR 63.10881(a)(1), (a)(2), (d), and (e)
(3)  40 CFR 63.10885(a)(1), (a)(2)(i), (b)
(4)  40 CFR 63.10886
(5)  40 CFR 63.10890
(6)  40 CFR 63.10899(a),(b)(1),(b)(6),(c)(3),(d), (76) 40 CFR 63.10905
(87) 40 CFR 63.10906

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on May 17, 2019. Additional information was received on August 28, 2019.

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 091-41459-00078. The operation of this proposed
modification shall be subject to the conditions of the attached proposed Significant Permit Modification No. 091-41648-00078.

The staff recommends to the Commissioner that the Part 70 Significant Source Modification and Significant Permit Modification be approved.

**IDEM Contact**

(a) If you have any questions regarding this permit, please contact Ethan Horvath, Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251, or by telephone at (317) 233-8397 or (800) 451-6027, and ask for Ethan Horvath or (317) 233-8397.

(b) A copy of the findings is available on the Internet at: [http://www.in.gov/ai/appfiles/idem-caats/](http://www.in.gov/ai/appfiles/idem-caats/)

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: [http://www.in.gov/idem/airquality/2356.htm](http://www.in.gov/idem/airquality/2356.htm); and the Citizens' Guide to IDEM on the Internet at: [http://www.in.gov/idem/6900.htm](http://www.in.gov/idem/6900.htm).
## Appendix A: Emission Calculations

### Summary

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**Permit Reviewer:** Ethan Horvath

**Emission Units:** PM, PM$_{10}$, PM$_{2.5}$, SO$_2$, NOx, VOC, CO, GHGs as CO$_{2}$e

<table>
<thead>
<tr>
<th>Activity</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>GHGs as CO$_{2}$e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scrap/Charge Handling</td>
<td>13.01</td>
<td>7.81</td>
<td>7.81</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Two (2) EIFs #3 &amp; #4 (melting)</td>
<td>19.51</td>
<td>18.65</td>
<td>18.65</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Magnesium Treatment</td>
<td>39.03</td>
<td>39.03</td>
<td>39.03</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Pouring/Cooling - Power and Free Line</td>
<td>34.69</td>
<td>52.03</td>
<td>52.03</td>
<td>0.43</td>
<td>0.22</td>
<td>3.04</td>
<td>269.86</td>
<td></td>
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<tr>
<td>One (1) Manual Shakeout</td>
<td>2.17</td>
<td>2.17</td>
<td>2.17</td>
<td>0.00</td>
<td>0.00</td>
<td>26.02</td>
<td>134.93</td>
<td>216.81</td>
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<td>48.57</td>
<td>48.57</td>
<td>0.00</td>
<td>0.00</td>
<td>26.02</td>
<td>134.93</td>
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</tr>
<tr>
<td>One (1) Sand Handling System</td>
<td>85.94</td>
<td>12.89</td>
<td>12.89</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>One (1) Shot Blast Machine (1)</td>
<td>1.13</td>
<td>1.13</td>
<td>1.13</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>One (1) Cutoff Saw</td>
<td>0.22</td>
<td>0.10</td>
<td>0.10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Twenty (20) Shell Mold Machines</td>
<td>24.14</td>
<td>24.14</td>
<td>24.14</td>
<td>0.00</td>
<td>0.00</td>
<td>6.69</td>
<td>0.00</td>
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<tr>
<td>Twelve (12) Shell Core Machines</td>
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<td>2.10</td>
<td>2.10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.58</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Natural Gas Combustion</td>
<td>0.34</td>
<td>1.35</td>
<td>1.35</td>
<td>0.11</td>
<td>17.77</td>
<td>0.98</td>
<td>14.93</td>
<td>21,455.28</td>
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<tr>
<td>Insignificant Activities (2)</td>
<td>2.20</td>
<td>2.20</td>
<td>2.20</td>
<td>0.00</td>
<td>0.49</td>
<td>0.00</td>
<td>50.00</td>
<td></td>
</tr>
<tr>
<td>Fugitive Emissions (3)</td>
<td>40.47</td>
<td>18.44</td>
<td>18.44</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>334.30</td>
<td>230.59</td>
<td>230.59</td>
<td>0.54</td>
<td>18.17</td>
<td>63.81</td>
<td>554.94</td>
<td>21,733.08</td>
</tr>
</tbody>
</table>

**Notes:**
1. Control device is integral.  
2. Insignificant Activities include: degreasing, welding, dry ice blasters, and natural gas combustion (preheater, ladle heaters, space heaters)  
3. Fugitive Emissions include: truck loading and unloading, sand storage piles, spent sand storage, belt sander BS1, unpaved & paved roads
Appendix A: Emission Calculations

### HAP Summary

- **Company Name:** Kingsbury Castings Division
- **Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
- **Significant Source Modification No.:** 091-41459-00078
- **Significant Permit Modification No.:** 091-41648-00078
- **Permit Reviewer:** Ethan Horvath

| Emission Unit | Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene | Phenol | Acrolein | Hydrogen Cyanide | M-Xylene | Naphthalene | O-Xylene | Total Aromatic Amines | Total C2 to C5 Aldehydes | Tetrachloroethene | Cobalt | Lead | Cadmium | Chromium | Manganese | Nickel | Total | Worst Case |
|---------------|---------|-----------------|--------------|--------|--------|--------|---------|------------------|----------|-------------|----------|----------------------|---------------------------|----------------------|--------|------|------|--------|---------|-------|-------|---------|----------|
| **Scrap/Charge Handling** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.65E-04 | 0.00 | 0.09 | 0.11 | 0.08 | 0.29 | 0.11 | **Manganese** |
| **Two (2) EIFs #3 & #4 (melting)** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.47E-04 | 0.00 | 0.14 | 0.17 | 0.13 | 0.43 | 0.17 | **Manganese** |
| **Pouring/Cooling - Power and Free Line** | 0.00 | 0.00 | 0.00 | 0.00 | 4.40E-04 | 0.00 | 0.25 | 0.30 | 0.23 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.65E-03 | 0.00 | 0.25 | 0.30 | 0.23 | 0.78 | 0.30 | **Manganese** |
| **One (1) Manual Shakeout** | 0.00 | 0.00 | 0.00 | 0.00 | 2.75E-05 | 0.00 | 0.02 | 0.02 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.65E-03 | 0.00 | 0.09 | 0.11 | 0.08 | 0.29 | 0.11 | **Manganese** |
| **One (1) Automated Shakeout** | 0.00 | 0.00 | 0.00 | 0.00 | 5.23E-05 | 0.00 | 0.03 | 0.04 | 0.03 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.65E-03 | 0.00 | 0.09 | 0.11 | 0.08 | 0.29 | 0.11 | **Manganese** |
| **One (1) Shot Blast Machine** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.58E-05 | 0.00 | 0.01 | 0.02 | 0.01 | 0.05 | 0.02 | **Manganese** |
| **Eighteen (18) Shell Mold Machines** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.58E-05 | 0.00 | 0.01 | 0.02 | 0.01 | 0.05 | 0.02 | **Manganese** |
| **Twelve (12) Shell Core Machines** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 2.58E-05 | 0.00 | 0.01 | 0.02 | 0.01 | 0.05 | 0.02 | **Manganese** |
| **Generators** | 1.27E-04 | 0.00 | 1.65E-03 | 0.00 | 4.48E-05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 1.65E-03 | **Formaldehyde** |
| **Natural Gas Combustion** | 3.73E-04 | 2.13E-04 | 0.01 | 0.32 | 6.04E-04 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 8.89E-05 | 1.96E-04 | 2.49E-04 | 6.75E-05 | 3.73E-04 | 0.34 | 0.32 | **Hexane** |
| **Insignificant Activities** | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.10 | 5.00E-06 | 8.10E-04 | 0.00 | 6.95E-03 | 0.12 | 0.01 | 0.23 | 0.12 | **Manganese** |
| **Total** | 2.51E-03 | 2.13E-04 | 0.09 | 0.32 | 3.21E-03 | 6.18 | 0.10 | 1.99 | 1.20 | 0.12 | 0.24 | 4.82 | 1.20 | 0.10 | 5.00E-06 | 4.10E-03 | 1.96E-04 | 1.81 | 2.27 | 1.66 | 22.11 | **Phenol** |

### Appendix A: Emission Calculations

- **Company Name:** Kingsbury Castings Division
- **Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
- **Significant Source Modification No.:** 091-41459-00078
- **Significant Permit Modification No.:** 091-41648-00078
- **Permit Reviewer:** Ethan Horvath

| Emission Unit | Benzene | Dichlorobenzene | Formaldehyde | Hexane | Toluene | Phenol | Acrolein | Hydrogen Cyanide | M-Xylene | Naphthalene | O-Xylene | Total Aromatic Amines | Total C2 to C5 Aldehydes | Tetrachloroethene | Cobalt | Lead | Cadmium | Chromium | Manganese | Nickel | Total | Worst Case |
|---------------|---------|-----------------|--------------|--------|--------|--------|---------|------------------|----------|-------------|----------|----------------------|---------------------------|----------------------|--------|------|------|--------|---------|-------|-------|---------|----------|
## Appendix A: Emissions Calculations

### ATPA Emissions and Evaluation of the Sand handling operation

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**Permit Reviewer:** Ethan Horvath

<table>
<thead>
<tr>
<th>Sand Handling Operation</th>
<th>Yearly Actual Sand Usage</th>
<th>Throughput (tons/yr)</th>
<th>Control Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2017</td>
<td>16,827.20</td>
<td>94.05%</td>
</tr>
<tr>
<td></td>
<td>2018</td>
<td>17,974.10</td>
<td></td>
</tr>
<tr>
<td><strong>Average 2-Year Actual Sand Usage</strong></td>
<td></td>
<td><strong>17,490.10</strong></td>
<td><strong>94.05%</strong></td>
</tr>
</tbody>
</table>

### Baseline Emissions (tons/yr)

<table>
<thead>
<tr>
<th></th>
<th>PM</th>
<th>PM2.5</th>
<th>PM10</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sand Handling Emission Factors in lb/ton sand</strong></td>
<td>3.60</td>
<td>0.54</td>
<td>0.54</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Baseline Emissions of the Sand Handling Operation</strong></td>
<td>1.86</td>
<td>0.28</td>
<td>0.28</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Projected Actual Sand Usage

<table>
<thead>
<tr>
<th></th>
<th>Limited Throughput (tons/yr)</th>
<th>Control Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sand Handling Operation</strong></td>
<td>24,000.00</td>
<td><strong>94.05%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Projected Emissions (tons/year)</th>
<th>PM</th>
<th>PM2.5</th>
<th>PM10</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sand Handling Emission Factors in lb/ton sand</strong></td>
<td>3.60</td>
<td>0.54</td>
<td>0.54</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td><strong>Projected Emissions of Sand Handling Operation (SAND-1)</strong></td>
<td>2.57</td>
<td>0.39</td>
<td>0.39</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

### Methodology:

**Baseline Emissions (tons/yr) =** Actual Sand Usage Throughput (tons/yr) \* Emission Factors (lb/ton sand) / 2000 (lb/tn) \* (1 - Control Efficiency (%))

**Projected Emissions (tons/yr) =** Limited Sand Throughput (tons/yr) \* Emission Factors (lb/ton sand) / 2000 (lb/tn) \* (1 - Control Efficiency (%))

This limited throughput of sand is bottlenecked by the metal melting capacity of the Electric Induction Furnaces. This was the same case as the existing sand handling operation that is being replaced.
Appendix A: Emissions Calculations
Modification Summary

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41459-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

<table>
<thead>
<tr>
<th>Emission Units</th>
<th>PM</th>
<th>PM$_{10}^*$</th>
<th>PM$_{2.5}^*$</th>
<th>SO$_2$</th>
<th>NO$_x$</th>
<th>VOC</th>
<th>CO</th>
<th>GHGs as CO$_2$e</th>
<th>Total HAPs</th>
<th>Worst Single HAP</th>
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</thead>
<tbody>
<tr>
<td>Sand Handling Operation</td>
<td>85.94</td>
<td>12.89</td>
<td>12.89</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td>Shell Molding Machines (MOL017 and MOL018)</td>
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<td>2.68</td>
<td>2.68</td>
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<td>0.74</td>
<td>0.00</td>
<td>0.00</td>
<td>0.55</td>
<td>0.55 Phenol</td>
<td>0.55 Phenol</td>
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<tr>
<td>Natural Gas Combustion (MOL017 and MOL018)</td>
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<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.86</td>
<td>0.05</td>
<td>0.72</td>
<td>1,036.71</td>
<td>0.02</td>
<td>0.02 Hexane</td>
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<td><strong>Total</strong></td>
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<td><strong>15.64</strong></td>
<td><strong>15.64</strong></td>
<td><strong>0.01</strong></td>
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Note:
*PM$_{10}^* = PM$_{2.5}^*$
### Appendix A: Emission Calculations

#### Scrap and Charge Handling, Melting, Magnesium Treatment

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41499-00078  
**Significant Permit Modification No.:** 091-41499-00078  
**Permit Reviewer:** Ethan Horvath

**Maximum Melt Rate (tons/hour):** 4.95 for two EIF furnaces constructed in 2000  
**Maximum Melt Rate (tons/year):**  43,362  

**Process:** Rate Pollutant Emission Factor  
**Emissions Before Control (lb/ton produced)**  
**Emissions Before Control (lb/hr)**  
**Type of control**  
**Control Efficiency (%)**  
**Emissions After Control (lb/ton/yr)**  
**Emissions After Control (lb/hr)**  

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**Methodology**

\[
Ef = \text{emission factor}  
Ebc = \text{emissions before control}  
Eac = \text{emissions after control}  
Ebc (ton/hr) = \text{Rate (ton iron/yr)} \times Ef (lb/ton) \times \left(\frac{1 \text{ ton}}{2000 \text{ lb}}\right)  
Eac (ton/hr) = \text{Ebc (ton/hr)} \times (1 - \text{Control Efficiency})  
Emissions (lb/yr) = \text{Emissions (ton/yr)} \times (2000 \text{ lb/ton}) \times (1 \text{ yr/8760 hr})
\]

---

*Note: All emissions are calculated assuming operating 8,760 hours per year.*
### Appendix A: Emission Calculations

#### Pouring, Cooling, and Shakeout

**Company Name:** Kingsbury Castings Division

**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345

**Significant Source Modification No.:** 091-41499-00078

**Significant Permit Modification No.:** 091-41648-00078

**Permit Reviewer:** Ethan Harvath

#### Emission Calculations

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Note: Additional HAPs emissions for Pouring, Cooling, and Shakeout are shown on previous pages. See previous page for Methodology.
Appendix A: Emission Calculations

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41499-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

### Castings Cleaning and Cutoff Saw

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<td>NOx</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>99.00%</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>PM/PM10 factors based on</td>
<td></td>
<td>VOC</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>99.00%</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>outlet grain loading</td>
<td></td>
<td>CO</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>99.00%</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>chromium</td>
<td>1.3E-04</td>
<td>0.332</td>
<td>1.45</td>
<td>fabric filter, K1</td>
<td>99.00%</td>
<td>0.003</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td></td>
<td>manganese</td>
<td>1.6E-04</td>
<td>0.386</td>
<td>1.75</td>
<td>fabric filter, K1</td>
<td>99.00%</td>
<td>0.004</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td></td>
<td>nickel</td>
<td>1.2E-04</td>
<td>0.303</td>
<td>1.33</td>
<td>fabric filter, K1</td>
<td>99.00%</td>
<td>0.003</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lead</td>
<td>2.3E-07</td>
<td>0.001</td>
<td>0.003</td>
<td>fabric filter, K1</td>
<td>99.00%</td>
<td>0.00001</td>
<td>0.00003</td>
</tr>
</tbody>
</table>

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.

### Cutoff Saw

<table>
<thead>
<tr>
<th>Process:</th>
<th>Rate (tons metal/yr)</th>
<th>Pollutant</th>
<th>Emission Factor (lb/ton produced)</th>
<th>Emissions Before Control (lbs/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
<th>Emissions After Control (lbs/hr)</th>
<th>Emissions After Control (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cutoff saw</td>
<td>43.362</td>
<td>PM</td>
<td>0.01</td>
<td>0.060</td>
<td>0.217</td>
<td>none</td>
<td>0.056</td>
<td>0.217</td>
<td></td>
</tr>
</tbody>
</table>

Source of Criteria: FIRE 6.23
Pollutant Factors: EPA SCC# 3-04-003-60

See previous page for methodology for Sand Handling and Cutoff Saw

Methodology for Castings Cleaning

\[
Eac (lb/hr) = \text{Rate (cfm)} \times \text{Ef (gr/dscf)} \times (60 \text{ min/hr}) \times (1 \text{ lb/7000 gr})
\]

\[
Eic (lb/hr) = Eac \times (1 - \text{Control Efficiency})
\]

\[
\text{Emissions (ton/yr)} = \frac{Eac \times 1 \text{ ton/2000 lb}}{8760 \text{ hr/yr}}
\]
## Appendix A: Emissions Calculations

### Sand Handling

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**Permit Reviewer:** Ethan Horvath

<table>
<thead>
<tr>
<th>Material</th>
<th>Existing Maximum Throughput (ton sand/yr)</th>
<th>New Maximum Throughput (ton sand/yr)</th>
<th>Control Device</th>
<th>Control Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Handling</td>
<td>43,562.00</td>
<td>47,742.00</td>
<td>Dust Collector (K13)</td>
<td>94.05%</td>
</tr>
</tbody>
</table>

### Emission Unit Potentials

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM$^1$</th>
<th>PM$_{10}^2$</th>
<th>PM$_{2.5}^3$</th>
<th>SO$^4$</th>
<th>NO$^4$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled Sand Handling Potential to Emit in lb/hr</td>
<td>19.62</td>
<td>2.94</td>
<td>2.94</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Controlled Sand Handling Potential to Emit in lb/hr</td>
<td>1.17</td>
<td>0.18</td>
<td>0.18</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Uncontrolled Sand Handling Potential to Emit in ton/yr</td>
<td>51.11</td>
<td>7.77</td>
<td>7.77</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Controlled Sand Handling Potential to Emit in ton/yr</td>
<td>5.11</td>
<td>0.77</td>
<td>0.77</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Notes:

1. It is assumed that there is a 1:1 ratio of Sand Handling Throughput to Metal Throughput.
2. PM$_{10}$ = PM$_{2.5}$
3. Emission Factor taken from USEPA WebFIRE (SSC: 3-04-003-50)
4. The Dust Collector (K13) is the main control device for the Sand Handling Operation, with the nine (9) Bin Vent Filters as the other controls.
5. Although there is a 1:1 ratio of sand to metal for production, both Sand Handling Operations cannot produce more sand than metal, therefore only the New Maximum Throughput (ton sand/yr) is used to calculate the Potential to Emit of both Sand Handling Operations.
6. Methodology:
   - Uncontrolled Sand Handling Potential to Emit in lb/hr = Emission Factor in lb/ton sand * Maximum Throughput (ton sand/yr) / 8760 (hr/yr)
   - Controlled Sand Handling Potential to Emit in lb/hr = Uncontrolled Sand Handling Potential to Emit in lb/hr * (1 - Control Efficiency (%))
   - Uncontrolled Sand Handling Potential to Emit in ton/yr = Uncontrolled Sand Handling in lb/hr * 8760 (hr/yr) / 2000 (lb/tn)
   - Controlled Sand Handling Potential to Emit in ton/yr = Controlled Sand Handling Potential to Emit in lb/hr * 8760 (hr/yr) / 2000 (lb/tn)
Mold and Core Making

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41459-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

<table>
<thead>
<tr>
<th>Material</th>
<th>Existing Maximum Throughput (ton sand/yr)2</th>
<th>New Maximum Throughput (ton sand/yr)2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Handling1</td>
<td>47,898.20</td>
<td>47,742.00</td>
</tr>
<tr>
<td>Mold Sand3</td>
<td>43,882.34</td>
<td>43,922.64</td>
</tr>
<tr>
<td>Core Sand4</td>
<td>3,815.86</td>
<td>3,819.36</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM10</th>
<th>PM2.55</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>Phenol</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/ton sand6</td>
<td>1.10</td>
<td>1.10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.31</td>
<td>0.00</td>
<td>0.23</td>
</tr>
<tr>
<td>Existing Shell Mold Machines Potential to Emit in lb/hr</td>
<td>5.51</td>
<td>5.51</td>
<td>5.51</td>
<td>0.00</td>
<td>1.53</td>
<td>0.00</td>
<td>1.13</td>
</tr>
<tr>
<td>MOL017 Shell Mold Machine Potential to Emit in lb/hr</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
<td>0.00</td>
<td>0.04</td>
<td>0.00</td>
<td>0.06</td>
</tr>
<tr>
<td>MOL018 Shell Mold Machine Potential to Emit in lb/hr</td>
<td>0.31</td>
<td>0.31</td>
<td>0.31</td>
<td>0.00</td>
<td>0.04</td>
<td>0.00</td>
<td>0.06</td>
</tr>
<tr>
<td>New Shell Mold Machines Potential to Emit in lb/hr</td>
<td>0.52</td>
<td>0.52</td>
<td>0.52</td>
<td>0.00</td>
<td>1.53</td>
<td>0.00</td>
<td>1.13</td>
</tr>
<tr>
<td>New Shell Core Machines Potential to Emit in lb/hr</td>
<td>0.48</td>
<td>0.48</td>
<td>0.48</td>
<td>0.00</td>
<td>0.13</td>
<td>0.00</td>
<td>0.10</td>
</tr>
<tr>
<td>Existing Shell Mold Machines Potential to Emit in ton/yr</td>
<td>24.14</td>
<td>24.14</td>
<td>24.14</td>
<td>0.00</td>
<td>6.69</td>
<td>0.00</td>
<td>4.94</td>
</tr>
<tr>
<td>Existing Shell Core Machines Potential to Emit in ton/yr</td>
<td>2.10</td>
<td>2.10</td>
<td>2.10</td>
<td>0.00</td>
<td>0.58</td>
<td>0.00</td>
<td>0.43</td>
</tr>
<tr>
<td>MOL017 Shell Mold Machine Potential to Emit in ton/yr</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
<td>0.27</td>
</tr>
<tr>
<td>MOL018 Shell Mold Machine Potential to Emit in ton/yr</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
<td>0.27</td>
</tr>
<tr>
<td>New Shell Mold Machines Potential to Emit in ton/yr</td>
<td>24.16</td>
<td>24.16</td>
<td>24.16</td>
<td>0.00</td>
<td>6.70</td>
<td>0.00</td>
<td>4.94</td>
</tr>
<tr>
<td>New Shell Core Machines Potential to Emit in ton/yr</td>
<td>2.10</td>
<td>2.10</td>
<td>2.10</td>
<td>0.00</td>
<td>0.58</td>
<td>0.00</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Methodology:
Shell Mold Machines Potential to Emit in lb/hr = Emission Factor in lb/ton sand * Mold Sand Maximum Throughput (ton sand/yr) / 8760 (hr/yr)
Shell Core Machines Potential to Emit in lb/hr = Emission Factor in lb/ton sand * Core Sand Maximum Throughput (ton sand/yr) / 8760 (hr/yr)
Shell Mold Machines Potential to Emit in ton/yr = Shell Mold Machines in lb/hr * 8760 (hr/yr) / 2000 (lb/ton)
Shell Core Machines Potential to Emit in ton/yr = Shell Core Machines in lb/hr * 8760 (hr/yr) / 2000 (lb/ton)

\[
\text{VOC Emission Factor in lb/ton sand} = \frac{\text{Glue Usage Rate} \times \text{Wt. % VOC}}{\text{Flash Off Factor} \times \text{Resin Evaporation Weight Loss}}
\]

\[
\text{Phenol Emission Factor in lb/ton sand} = \frac{\text{Glue Usage Rate} \times \text{Wt. % Phenol}}{\text{Phenol Evaporation Weight Loss}}
\]

Note:
1It is assumed that there is a 1:1 ratio of Sand Handling Throughput to Metal Throughput.
2The Maximum Sand Handling Throughput is based on Maximum Melting Rate of the Electric Induction Furnaces (FRN03 and FRN04) and is multiplied by a safety factor of 1.1.
3Mold Sand constitutes approximately 92% of the sand makeup in the Sand Handling Process.
4Core Sand constitutes approximately 8% of the sand makeup in the Sand Handling Process.
5PM2.5 = PM10
6Emission Factors taken from USEPA WebFIRE (SCC: 3-04-003-19)

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 conservative since 100% of phenol is assumed to be evaporated at the molding and core making. The worst case between this value and the value calculated for pouring, cooling, and shakeout will be used for summary.
HAPs from Pouring, Cooling, and Shakeout

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41459-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

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

<table>
<thead>
<tr>
<th>HAP</th>
<th>Emission Factor (lb HAP released/lb index)</th>
<th>PTE (lb/yr)</th>
<th>PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acrolein</td>
<td>0.000047</td>
<td>194</td>
<td>0.097</td>
</tr>
<tr>
<td>Benzene*</td>
<td>0.00000977</td>
<td>4.02</td>
<td>0.002</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>0.000025</td>
<td>144</td>
<td>0.072</td>
</tr>
<tr>
<td>Hydrogen Cyanide*</td>
<td>0.00097</td>
<td>3988</td>
<td>1.99</td>
</tr>
<tr>
<td>M-Xylene</td>
<td>0.00585</td>
<td>2410</td>
<td>1.20</td>
</tr>
<tr>
<td>Naphthalene</td>
<td>0.003058</td>
<td>239</td>
<td>0.119</td>
</tr>
<tr>
<td>O-Xylene</td>
<td>0.000117</td>
<td>482</td>
<td>0.241</td>
</tr>
<tr>
<td>Phenol*</td>
<td>0.000395</td>
<td>1627</td>
<td>0.813</td>
</tr>
<tr>
<td>Toluene*</td>
<td>0.00000124</td>
<td>5.12</td>
<td>0.003</td>
</tr>
<tr>
<td>Total Aromatic Amines</td>
<td>0.002339</td>
<td>96.35</td>
<td>0.482</td>
</tr>
<tr>
<td>Total C2 to C5 Aldehydes</td>
<td>0.00585</td>
<td>2410</td>
<td>1.20</td>
</tr>
<tr>
<td>Total HAPs</td>
<td></td>
<td>21137</td>
<td>10.6</td>
</tr>
</tbody>
</table>

**METHODOLOGY**

The index material is the resin
Annual Usage of Index Material (lb/yr) = Maximum plant capacity (ton/yr) * (2000 lb/1 ton) * 0.0475 lb index/lb sand
PTE (lb/yr) = Annual Usage of Index Material (lb/yr) * Emission Factor (lb HAP released/lb Index Material)
PTE (ton/yr) = PTE (lb/yr) * (1 ton/2000 lb)

Emission Factors are from Calculating Emission Factors for Pouring, Cooling, and Shakeout, Gary E. Mosher, American Foundrymen's Society, Modern Casting, Oct. 1994

*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 (10% safety factor applied).
## Appendix A: Emissions Calculations
### Natural Gas Combustion Only

#### Company Name: Kingsbury Castings Division
#### Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
#### Significant Source Modification No.: 091-41459-00078
#### Significant Permit Modification No.: 091-41648-00078
#### Permit Reviewer: Ethan Horvath

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Combined Maximum Heat Input Capacity (MMBtu/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEAT2</td>
<td>2.20</td>
</tr>
<tr>
<td>Ladle Heaters</td>
<td>2.15</td>
</tr>
<tr>
<td>Shell Mold Machines</td>
<td>16.00</td>
</tr>
<tr>
<td>Shell Core Machines</td>
<td>2.84</td>
</tr>
<tr>
<td>Space Heaters</td>
<td>15.65</td>
</tr>
<tr>
<td>NEW Shell Mold Machines</td>
<td>2.00</td>
</tr>
<tr>
<td>NEW Pellet Machines</td>
<td>4.95</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>41.39</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Heat Input Capacity (MMBtu)</th>
<th>Potential Throughput</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Units</td>
<td>2.00</td>
<td>17.18</td>
</tr>
<tr>
<td>Total Units</td>
<td>41.39</td>
<td>1020</td>
</tr>
</tbody>
</table>

#### Pollutants

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM*</td>
<td>1.9</td>
<td>7.6</td>
<td>7.6</td>
<td>0.6</td>
<td>5.5</td>
<td>100</td>
<td>84</td>
</tr>
<tr>
<td>PM10*</td>
<td>0.02</td>
<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.96</td>
<td>0.05</td>
<td>0.32</td>
</tr>
<tr>
<td>direct PM2.5*</td>
<td>0.34</td>
<td>1.35</td>
<td>1.35</td>
<td>0.11</td>
<td>17.77</td>
<td>0.98</td>
<td>14.93</td>
</tr>
<tr>
<td>SO2</td>
<td>0.11</td>
<td>17.77</td>
<td>17.77</td>
<td>0.98</td>
<td>14.93</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32**

### Methodology

All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu
MMCF = 1,000,000 Cubic Feet of Gas

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

Emission (ton/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

### Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>HAPs - Organics</th>
<th>Benzene</th>
<th>Dichlorobenzene</th>
<th>Formaldehyde</th>
<th>Resin</th>
<th>Toluene</th>
<th>Total - Organics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>2.1E-03</td>
<td>1.2E-03</td>
<td>7.5E-02</td>
<td>1.8E+00</td>
<td>3.4E-03</td>
<td>0.33</td>
</tr>
<tr>
<td>New Units Potential Emissions in ton/yr</td>
<td>3.7E-04</td>
<td>2.1E-04</td>
<td>1.3E-02</td>
<td>0.30</td>
<td>6.0E-04</td>
<td></td>
</tr>
</tbody>
</table>

### Hazardous Air Pollutants (HAPs) - Metals

<table>
<thead>
<tr>
<th>HAPs - Metals</th>
<th>Lead</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Manganese</th>
<th>Nickel</th>
<th>Total - Metals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>5.0E-04</td>
<td>1.6E-03</td>
<td>1.4E-03</td>
<td>3.8E-04</td>
<td>2.1E-03</td>
<td>0.70-04</td>
</tr>
<tr>
<td>New Units Potential Emissions in ton/yr</td>
<td>4.3E-06</td>
<td>9.4E-06</td>
<td>1.2E-05</td>
<td>3.3E-06</td>
<td>1.3E-05</td>
<td></td>
</tr>
</tbody>
</table>

### Greenhouse Gases (GHGs)

<table>
<thead>
<tr>
<th>Greenhouse Gas</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>140000</td>
<td>2.3</td>
<td>2.2</td>
</tr>
<tr>
<td>New Units Summed Potential Emissions in ton/yr</td>
<td>1.031</td>
<td>0.02</td>
<td>0.02</td>
</tr>
</tbody>
</table>

### Methodology

The NOx Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low NOx burner is 0.64.

Emission Factors are from AP-42, Tables 1.4-2, SCC #1-02-006-02, 2-01-006-02, 1-03-006-02, and 1-03-006-03.

Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

CO2e (ton/yr) = CO2 Potential Emissions ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) x N2O Potential Emission ton/yr x N2O GWP (298).
## Insignificant Activities - Summary

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41456-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**Permit Reviewer:** Ethan Horvath

### Criteria Pollutant Summary

<table>
<thead>
<tr>
<th>Insignificant Activity</th>
<th>PM</th>
<th>PM10</th>
<th>VOC</th>
<th>NOx</th>
<th>CO</th>
<th>SO2</th>
<th>GHGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degreasing</td>
<td>0.486</td>
<td>0.486</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welding</td>
<td>0.456</td>
<td>0.456</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Ice Blasters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stationary Blasting Cabinet 1</td>
<td>0.465</td>
<td>0.465</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portable Blasting Cabinet 1</td>
<td>0.907</td>
<td>0.907</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portable Blasting Cabinet 2</td>
<td>0.105</td>
<td>0.105</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Portable Blasting Cabinet 3</td>
<td>0.721</td>
<td>0.721</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019 Maintenance Blasting Cabinets Total</td>
<td>1.783</td>
<td>1.783</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2.201</td>
<td>2.201</td>
<td>0.486</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td></td>
</tr>
</tbody>
</table>

### Organic HAPs Summary

<table>
<thead>
<tr>
<th>Insignificant Activity</th>
<th>Benzene</th>
<th>Dichlorobenzene</th>
<th>Formaldehyde</th>
<th>Hexane</th>
<th>Toluene</th>
<th>Tetrachloroethylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degreasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.00715</td>
</tr>
<tr>
<td>Welding</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Ice Blasters</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Total</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

### Metal HAPs Summary

<table>
<thead>
<tr>
<th>Insignificant Activity</th>
<th>Lead</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Manganese</th>
<th>Nickel</th>
<th>Cobalt</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degreasing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.0075</td>
</tr>
<tr>
<td>Welding</td>
<td>0.001</td>
<td>0.007</td>
<td>0.118</td>
<td>0.0005</td>
<td>0.000005</td>
<td>0.1329</td>
<td></td>
</tr>
<tr>
<td>Dry Ice Blasters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>0.001</td>
<td>0.0000</td>
<td>0.118</td>
<td>0.0009</td>
<td>0.000005</td>
<td>0.2255</td>
<td></td>
</tr>
</tbody>
</table>
Appendix A: Emission Calculations

Appendix A: Activities - Degreasing, Welding, Dry Ice Blasters, Blasting Cabinet

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41455-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

### Degreasing

<table>
<thead>
<tr>
<th>Number of Degreasers</th>
<th>Maximum Annual Capacity (gal/yr)</th>
<th>% VOC</th>
<th>% HAP</th>
<th>Density (br/gal)</th>
<th>PTE VOC (ton/yr)</th>
<th>PTE HAP (tetrachloroethene) (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>145</td>
<td>100</td>
<td>0.2</td>
<td>6.7</td>
<td>0.438</td>
<td>0.097/16</td>
</tr>
</tbody>
</table>

**Methodology**

PTE VOC (ton/yr) = Number of Degreasers * Maximum Annual Capacity (gal/yr) * %VOC * Density of Solvent (br/gal) * (1 ton/2000 pounds)

PTE HAP (ton/yr) = Number of Degreasers * Maximum Annual Capacity (gal/yr) * %HAP * Density of Solvent (br/gal) * (1 ton/2000 pounds)

### SMAW Welding

<table>
<thead>
<tr>
<th>Maximum Rod Usage (lb/yr)</th>
<th>Emission Factor (lb PM/lb Rod)</th>
<th>Emission Factor (lb HAP/lb Rod)</th>
<th>Emission Factor (lb Cr/lb Rod)</th>
<th>Emission Factor (lb Co/lb Rod)</th>
<th>Emission Factor (lb Ni/lb Rod)</th>
<th>Emission Factor (lb Pb/lb Rod)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000</td>
<td>0.022</td>
<td>0.036</td>
<td>0.001</td>
<td>0.00001</td>
<td>0.003</td>
<td>0.0017</td>
</tr>
</tbody>
</table>

**Methodology**

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

PTE (ton/yr) = Maximum Rod Usage (lb/yr) * Emission Factor (lb/lb Rod) * (1 lb/2000 lb)

### Dry Ice Blasters

<table>
<thead>
<tr>
<th>Abrasive Blasting Operations</th>
<th>Media Used</th>
<th>Maximum Usage (tons/year)</th>
<th>Weight % CO2</th>
<th>CO2 Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shot Blaster</td>
<td>Dry ice</td>
<td>50</td>
<td>100%</td>
<td>0.408</td>
</tr>
</tbody>
</table>

**Methodology**

CO2 Emissions (tons/yr) = Maximum Usage (tons/year) * Weight% CO2

### Stationary Blast Cabinet

**Table 1 - Emission Factors for Abrasives**

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>b lb PM / lb abrasive</th>
<th>lb PM10 / lb PM</th>
<th>Emission Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>0.05</td>
<td>0.30</td>
<td>0.041</td>
</tr>
<tr>
<td>Grit</td>
<td>0.010</td>
<td>0.70</td>
<td>0.010</td>
</tr>
<tr>
<td>Steel Shot</td>
<td>0.004</td>
<td>0.86</td>
<td>0.004</td>
</tr>
<tr>
<td>Other</td>
<td>0.010</td>
<td></td>
<td>0.010</td>
</tr>
</tbody>
</table>

**Table 2 - Density of Abrasives (lb/ft³)**

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>Density (lb/ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al oxides</td>
<td>160</td>
</tr>
<tr>
<td>Steel</td>
<td>487</td>
</tr>
<tr>
<td>Sand</td>
<td>99</td>
</tr>
</tbody>
</table>

### Calculations

**Flow Rate (FR) (lb/hr) = 460 per nozzle**

Uncontrolled Emissions (E, lb/hr)

\[ EF = \text{emission factor (lb PM/lb abrasive)} \]

\[ FR = \text{Flow Rate (lb/hr)} \]

\[ w = \text{fraction of time of wet blasting} = \]

\[ N = \text{number of nozzles} = \]

**METHODOLOGY**

Based on using glass beads and 99% control. Used for maintenance purposes @ 200 hours per year.


Ton/yr = lb/hr X 200 hr/yr X ton/2000 lbs

Flow Rate (FR) (lb/hr) = \( FR = \frac{FR_1 \times (ID/ID_1)^2 \times (D/D_1)}{N} \)

\[ E = EF \times FR \times \frac{1}{(1-w/200)} \times N \]

w should be entered in as a whole number (if w is 50%, enter 50)
Appendix A: Emission Calculations

Insignificant Activities - Degreasing, Welding, Dry Ice Blasters, Blasting Cabinet

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41465-00078
Significant Permit Modification No.: 091-41648-00078

Portable Blast Cabinet 1
Permit Reviewer: Ethan Horvath

Emission Factors for Abrasives

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>( \text{lb PM/ lb abrasive} )</th>
<th>( \text{lb PM10/ lb PM} )</th>
<th>Abrasive Density (lb/ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>0.041</td>
<td>0.70</td>
<td>160</td>
</tr>
<tr>
<td>Grit</td>
<td>0.010</td>
<td>0.70</td>
<td>99</td>
</tr>
<tr>
<td>Steel Shot</td>
<td>0.004</td>
<td>0.86</td>
<td>99</td>
</tr>
<tr>
<td>Other</td>
<td>0.010</td>
<td></td>
<td>487</td>
</tr>
</tbody>
</table>

Table 1 - Emission Factors for Abrasives

<table>
<thead>
<tr>
<th>Nozzle Pressure (psig)</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>120</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal diameter, in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/16</td>
<td>38</td>
<td>55</td>
<td>63</td>
<td>70</td>
<td>77</td>
<td>91</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/4</td>
<td>109</td>
<td>138</td>
<td>168</td>
<td>195</td>
<td>221</td>
<td>259</td>
<td>280</td>
<td>309</td>
<td>366</td>
</tr>
<tr>
<td>5/16</td>
<td>205</td>
<td>247</td>
<td>292</td>
<td>354</td>
<td>377</td>
<td>420</td>
<td>462</td>
<td>507</td>
<td>593</td>
</tr>
<tr>
<td>7/16</td>
<td>385</td>
<td>472</td>
<td>580</td>
<td>645</td>
<td>755</td>
<td>820</td>
<td>905</td>
<td>940</td>
<td>1140</td>
</tr>
<tr>
<td>1/2</td>
<td>503</td>
<td>615</td>
<td>726</td>
<td>836</td>
<td>945</td>
<td>1050</td>
<td>1166</td>
<td>1265</td>
<td>1460</td>
</tr>
<tr>
<td>3/8</td>
<td>820</td>
<td>990</td>
<td>1170</td>
<td>1336</td>
<td>1510</td>
<td>1680</td>
<td>1850</td>
<td>2030</td>
<td>2371</td>
</tr>
<tr>
<td>3/4</td>
<td>1140</td>
<td>1420</td>
<td>1670</td>
<td>1915</td>
<td>2160</td>
<td>2400</td>
<td>2630</td>
<td>2860</td>
<td>3360</td>
</tr>
<tr>
<td>1</td>
<td>2030</td>
<td>2460</td>
<td>2900</td>
<td>3340</td>
<td>3780</td>
<td>4200</td>
<td>4640</td>
<td>5050</td>
<td>5938</td>
</tr>
</tbody>
</table>

Flow Rate (FR) = \( \text{Flow Rate (lb/hr)} \) with internal nozzle diameter (ID)

\[
\text{Flow Rate (FR)} = \text{FR1} \times \left(\frac{\text{ID}}{\text{ID1}}\right)^2 \times \left(\frac{\text{D}}{\text{D1}}\right)
\]

\[
\text{E} = \text{EF} \times \text{FR} \times (1-w/200) \times N
\]

\[
\text{w should be entered in as a whole number (if w is 50%, enter 50)}
\]

Calculations

Flow Rate (FR) = 507.146 lb/hr per nozzle

Table 2 - Density of Abrasives (lb/ft³)

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>Density (lb/ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>99</td>
</tr>
<tr>
<td>Glass Bead</td>
<td>95</td>
</tr>
<tr>
<td>Steel</td>
<td>487</td>
</tr>
</tbody>
</table>

Flow Rate (FR) = 507.146 lb/hr per nozzle

Flow Rate (FR) (lb/hr) = 507.146

Uncontrolled Emissions (E, lb/hr)

\[
\text{E} = \text{EF} \times \text{FR} \times (1-w/200) \times N
\]

\[
\text{Uncontrolled Emissions} = \frac{5.07}{200} \times 2000 \times 200 = 5.07 \text{ lb/hr}
\]

METHODOLOGY

Internal diameter of 5/16" and pressure gauge of 105 psi. Used for maintenance purposes @ 200 hours per year.


Flow Rate (FR) (lb/hr) = \( \text{Flow Rate (ID1) x (ID/ID1)} \times \left(\frac{\text{D}}{\text{D1}}\right) \)

E = \( \text{EF} \times \text{FR} \times (1-w/200) \times N \)

w should be entered in as a whole number (if w is 50%, enter 50).
Appendix A: Emission Calculations
Insignificant Activities - Degreasing, Welding, Dry Ice Blasters, Blasting Cabinet

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41659-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

#### Portable Blast Cabinet 2

**Table 1 - Emission Factors for Abrasives**

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>lb PM/lb abrasive</th>
<th>lb PM10/lb PM</th>
<th>Density (lb/ft³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>0.041</td>
<td>0.70</td>
<td>160</td>
</tr>
<tr>
<td>Grit</td>
<td>0.010</td>
<td>0.70</td>
<td>99</td>
</tr>
<tr>
<td>Steel Shot</td>
<td>0.004</td>
<td>0.86</td>
<td>95</td>
</tr>
<tr>
<td>Other</td>
<td>0.010</td>
<td></td>
<td>487</td>
</tr>
</tbody>
</table>

**Table 2 - Density of Abrasives (lb/ft³)**

- **All abrasives**: 160
- **Sand**: 99
- **Glass Bead**: 95
- **Steel**: 487

**Table 3 - Sand Flow Rate (FR₁) Through Nozzle (lb/hr)**

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

<table>
<thead>
<tr>
<th>Nozzle Pressure (psig)</th>
<th>Nozzle Internal Diameter (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>40</td>
<td>42</td>
</tr>
<tr>
<td>50</td>
<td>49</td>
</tr>
<tr>
<td>60</td>
<td>55</td>
</tr>
<tr>
<td>70</td>
<td>63</td>
</tr>
<tr>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>90</td>
<td>77</td>
</tr>
<tr>
<td>100</td>
<td>91</td>
</tr>
</tbody>
</table>

**Calculations**

- **Flow Rate (FR) = Abrasive flow rate (lb/hr) with internal nozzle diameter (ID)**
- **FR₁ = Sand flow rate (lb/hr) with internal nozzle diameter (ID₁) From Table 3**
- **D = Density of abrasive (lb/ft³) From Table 2**
- **D₁ = Density of sand (lb/ft³)**
- **ID = Actual nozzle internal diameter (in)**
- **ID₁ = Nozzle internal diameter (in) from Table 3**

**Flow Rate (FR) (lb/hr) = 104.396 per nozzle**

**Uncontrolled Emissions (E, lb/hr)**

- **EF = emission factor (lb PM/ lb abrasive) From Table 1**
- **FR = Flow Rate (lb/hr) = 104.396**
- **w = fraction of time of wet blasting**
- **N = number of nozzles**

**Uncontrolled Emissions = 1.05 lb/hr; 0.10 ton/yr**

**METHODOLOGY**

Internal diameter of 1/4" and pressure gauge of 30 psig. Used for maintenance purposes @ 200 hours per year. Emission Factors from STAPPA/ALAPCO “Air Quality Permits”, Vol. I, Section 3 “Abrasive Blasting” (1991 edition)

Tons/yr = (FR) x (E)/(2000 lb) x 200 hours per year

- EF from Table 1
- FR from Table 3
- E = EF x FR x (1-w/200) x N
- w should be entered in as a whole number (if w is 50%, enter 50)
Appendix A: Emission Calculations

Insignificant Activities - Degreasing, Welding, Dry Ice Blasters, Blasting Cabinet

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source modification No.: 091-41455-00078
Significant Permit Modification No.: 091-41648-00078

Portable Blast Cabinet 3

Table 1 - Emission Factors for Abrasives

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>lb PM / lb abrasive</th>
<th>lb PM10 / lb PM</th>
<th>Abrasive Density (lb/ft3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand</td>
<td>0.041</td>
<td>0.70</td>
<td>160</td>
</tr>
<tr>
<td>Grit</td>
<td>0.010</td>
<td>0.70</td>
<td>99</td>
</tr>
<tr>
<td>Steel Shot</td>
<td>0.004</td>
<td>0.86</td>
<td>95</td>
</tr>
<tr>
<td>Other</td>
<td>0.010</td>
<td></td>
<td>437</td>
</tr>
</tbody>
</table>

Table 2 - Density of Abrasives (lb/ft3)

<table>
<thead>
<tr>
<th>Abrasive</th>
<th>Density (lb/ft3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al oxides</td>
<td>160</td>
</tr>
<tr>
<td>Sand</td>
<td>99</td>
</tr>
<tr>
<td>Glass Bead</td>
<td>95</td>
</tr>
<tr>
<td>Steel</td>
<td>437</td>
</tr>
</tbody>
</table>

Table 3 - Sand Flow Rate (FR1) Through Nozzle (b/hr)

Flow rate of Sand Through a Blasting Nozzle as a Function of Nozzle pressure and Internal Diameter

Calculations

**Flow Rate (FR) =** Sand flow rate (b/hr) with internal nozzle diameter (ID) =

\[
FR = FR_1 \times \left( \frac{ID}{ID_1} \right)^2 \times \frac{D}{D_1}
\]

**Uncontrolled Emissions (E, b/hr)**

\[
E = EF \times FR \times (1 - w/200) \times N
\]

**Flow Rate (FR) (b/hr) =**

\[
720.896 \text{ b/hr per nozzle}
\]

**Uncontrolled Emissions (E, b/hr) =**

\[
7.21 \text{ b/hr}
\]

**Uncontrolled Emissions (E, ton/yr) =**

\[
0.72 \text{ ton/yr}
\]

**METHODOLOGY**

Internal diameter of 3/8" and pressure gauge of 105 psi. Used for maintenance purposes @ 200 hours per year.


Flow Rate (FR) (b/hr) = FR1 x (ID/ID1)2 x (D/D1)

E = EF x FR x (1-w/200) x N

w should be entered as a whole number (if w is 50%, enter 50)
### Fugitive Emissions - Summary and Truck Loading/Unloading

<table>
<thead>
<tr>
<th>Fugitive Source</th>
<th>Capacity (tons sand/hr)</th>
<th>PM Emissions (lbs/hr)</th>
<th>PM10 Emissions (lbs/hr)</th>
<th>PM Emissions (tons/yr)</th>
<th>PM10 Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Loading and Unloading</td>
<td>4.95</td>
<td>1.78</td>
<td>0.843</td>
<td>7.81</td>
<td>3.69</td>
</tr>
<tr>
<td>Sand Storage Piles</td>
<td>2.12</td>
<td>0.37</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spent Sand Storage B51</td>
<td>0.03</td>
<td>0.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>0.82</td>
<td>0.26</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paved Roads</td>
<td>2.00</td>
<td>0.39</td>
<td></td>
<td></td>
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<tr>
<td><strong>Total Fugitives</strong></td>
<td><strong>40.47</strong></td>
<td><strong>18.44</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Truck Loading and Unloading**

Emission Factor (lb/ton) = \( k \times 0.0032 \times \frac{U}{5}^{1.3} \times \frac{M}{2}^{1.4} \)

- **M** (moisture content): 7.4%
- **U** (mean wind speed): 6.85
- **k** (Particle size multiplier): 0.74 PM
- **PM Emission Factor (lb/ton)** = 0.36
- **PM10 Emission Factor (lb/ton)** = 0.17

**Methodology:**
The Emission Factor equation is from AP-42, Chapter 13.2.4

Emissions (lbs/yr) = Capacity (ton/hr) * Emission Factor (lb/ton)

Emissions (ton/yr) = \( Emissions (lbs/yr) \times \frac{1 ton}{2000 lb} \)
Appendix A: Emission Calculations

Fugitive Emissions: Sand Storage Piles

Company Name: Kingsbury Castings Division
Address: 3302 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345
Significant Source Modification No.: 091-41459-00078
Significant Permit Modification No.: 091-41648-00078
Permit Reviewer: Ethan Horvath

Sand Storage Piles

<table>
<thead>
<tr>
<th>Sand Storage Piles</th>
<th>Capacity (tons sand/yr)</th>
<th>PM Emissions (tons/yr)</th>
<th>PM10 Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>39520</td>
<td>7.12</td>
<td>3.37</td>
</tr>
</tbody>
</table>

Emission Factor (lb/ton) = k x 0.0032 x ((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
PM Emission Factor (lb/ton) = 0.36
PM10 Emission Factor (lb/ton) = 0.17

Methodology
The Emission Factor equation is from AP-42, Chapter 13.2.4
Emissions (ton/yr) = Capacity (ton/hr) * Emission Factor (lb/ton) * (1 ton/2000 lb)

Spent Sand Storage Piles

<table>
<thead>
<tr>
<th>Spent Sand Storage Piles</th>
<th>Capacity (tons sand/hour)</th>
<th>PM Emissions (tons/yr)</th>
<th>PM10 Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.445</td>
<td>22.68</td>
<td>10.72</td>
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</table>

Controlled Spent Sand Storage

<table>
<thead>
<tr>
<th>Throughput</th>
<th>PM Ef *</th>
<th>PM10/PM2.5 Ef *</th>
<th>Ebc PM</th>
<th>Ebc PM10/PM2.5</th>
<th>Control Efficiency</th>
<th>Eac PM10/PM2.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>ton/hr</td>
<td>lb/ton</td>
<td>lb/ton</td>
<td>tpy</td>
<td>tpy</td>
<td>%</td>
<td>tpy</td>
</tr>
<tr>
<td>4.95</td>
<td>0.95</td>
<td>4.50E-01</td>
<td>20.60</td>
<td>0.76</td>
<td>94.05</td>
<td>1.23</td>
</tr>
</tbody>
</table>

Emission Factor (lb/ton) = k x 0.0032 x ((U/5)^1.3)/((M/2)^1.4)

M (moisture content): 3.7%
U (mean wind speed): 6.85
k (Particle size multiplier): 0.74 PM
PM Emission Factor (lb/ton) = 0.95
PM10 Emission Factor (lb/ton) = 0.45

Methodology
The Emission Factor equation is from AP-42, Chapter 13.2.4
Emissions (ton/yr) = Capacity (ton/hr) * Emission Factor (lb/ton) * (8760 hr/yr) * (1 ton/2000 lb)

Belt Sander

<table>
<thead>
<tr>
<th>Throughput</th>
<th>PM Ef *</th>
<th>PM10/PM2.5 Ef *</th>
<th>PM emissions</th>
<th>PM10/PM2.5 emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ton/hr</td>
<td>lb/ton</td>
<td>lb/ton</td>
<td>tpy</td>
<td>tpy</td>
</tr>
<tr>
<td>0.75</td>
<td>0.01</td>
<td>0.0045</td>
<td>0.03</td>
<td>0.01</td>
</tr>
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</table>

* PM and PM10 are based on fire for Grey Stone Iron Foundries SCC 3040369
Assume PM2.5 = PM10
Unpaved Roads

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

PM

Method 1a:

\[ E = \frac{k}{s} \left( \frac{W}{3} \right)^b \]

\[ \text{lb/mile} \]

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)

\[ E = 6.44 \text{ lb/mile} \times 391 \text{ mi/yr} = 1.26 \text{ tons/yr} \]

Taking natural mitigation due to precipitation into consideration:

\[ E_{\text{ext}} = 0.827 \text{ tons/yr} \]

where:

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

PM-10

Method 1a:

\[ E = \frac{k}{s} \left( \frac{W}{3} \right)^b \]

\[ \text{lb/mile} \]

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)

\[ E = 1.97 \text{ lb/mile} \times 391 \text{ mi/yr} = 0.385 \text{ tons/yr} \]

Taking natural mitigation due to precipitation into consideration:

\[ E_{\text{ext}} = 0.253 \text{ tons/yr} \]

where:

- \( p = 125 \) days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)
## Appendix A: Emission Calculations

### Paved Roads

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

<table>
<thead>
<tr>
<th>Emission Source</th>
<th>Emission Factor ( (\text{lb/mi}) )</th>
<th>Emission Rate ( (\text{ton/yr}) )</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>( 0.476 \times 2000 )</td>
<td>( 2.19 )</td>
</tr>
<tr>
<td>PM-10</td>
<td>( 0.092 \times 2000 )</td>
<td>( 0.425 )</td>
</tr>
</tbody>
</table>

**PM**

\[
\text{Eff} = k \times \frac{\text{sL}^2}{W^3} \times b \times C
\]

where:
- \( k = 0.082 \) (particle size multiplier for PM)
- \( \text{sL} = 9.7 \) (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)

\[
E = \text{Eff} \times 9201 \text{ miles/yr} = 2.19 \text{ tons/yr}
\]

**PM-10**

\[
\text{Eff} = k \times \frac{\text{sL}^2}{W^3} \times b \times C
\]

where:
- \( k = 0.016 \) (particle size multiplier for PM-10)
- \( \text{sL} = 9.7 \) (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)

\[
E = \text{Eff} \times 9201 \text{ miles/yr} = 0.425 \text{ tons/yr}
\]

Taking natural mitigation due to precipitation into consideration:

\[
E_{\text{ext}} = E \times (1 - \frac{p}{4 \times 365}) = 2.00 \text{ tons/yr}
\]

where \( p = 125 \) days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)
Appendix A: Emission Calculations

Reciprocating Internal Combustion Engines - Natural Gas

4-Stroke Rich-Burn (4SRB) Engines

Company Name: Kingsbury Castings Division
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345

Significant Source Modification No.: 091-41659-00078
Significant Permit Modification No.: 091-41658-00078
Permit Reviewer: Ethan Horvath

Emergency Generator 1

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor (lb/MMBtu)</th>
<th>Potential Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM*</td>
<td>9.50E-03</td>
<td>7.62E-04</td>
</tr>
<tr>
<td>PM10*</td>
<td>1.94E-02</td>
<td>1.56E-03</td>
</tr>
<tr>
<td>PM2.5*</td>
<td>1.94E-02</td>
<td>1.56E-03</td>
</tr>
<tr>
<td>SO2</td>
<td>5.88E-04</td>
<td>4.71E-06</td>
</tr>
<tr>
<td>NOx</td>
<td>2.21E+00</td>
<td>1.77E-01</td>
</tr>
<tr>
<td>CO</td>
<td>2.96E-02</td>
<td>2.35E-02</td>
</tr>
<tr>
<td>VOC</td>
<td>3.72E+00</td>
<td>2.99E-01</td>
</tr>
</tbody>
</table>

*PM emission factor is for filterable PM10. PM10 emission factor is filterable PM10 + condensable PM. PM2.5 emission factor is filterable PM2.5 + condensable PM.

Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]

Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

HAP pollutants consist of the nine highest HAPs included in AP-42 Table 3.2-2.

HAPs are considered HAPs, since they are considered Polycyclic Organic Matter.

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2

Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]

Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Greenhouse Gases (GHGs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMBtu</th>
<th>Potential Emissions in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>110</td>
<td>8.83</td>
</tr>
<tr>
<td>CH4</td>
<td>1.25</td>
<td>0.10</td>
</tr>
<tr>
<td>N2O</td>
<td>2.2</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Summed Potential Emissions in tons/yr = 9.99

CO2e (tons/yr) based on 11/29/2013

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMBtu</th>
<th>Potential Emissions in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2</td>
<td>110</td>
<td>8.83</td>
</tr>
<tr>
<td>CH4</td>
<td>1.25</td>
<td>0.10</td>
</tr>
<tr>
<td>N2O</td>
<td>2.2</td>
<td>0.00</td>
</tr>
</tbody>
</table>

CO2e (tons/yr) based on 10/30/2009

Abbreviations:

PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (10 um or less)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
CO2 = Carbon Dioxide
CH4 = Methane
# Greenhouse Gas Emissions from Pouring, Cooling, and Shakeout

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**Permit Reviewer:** Ethan Horvath

## Unlimited Rate Pollutant Emission Factor

<table>
<thead>
<tr>
<th>Process:</th>
<th>Unlimited Rate (tons iron/yr)</th>
<th>Pollutant</th>
<th>Emission Factor (lb/ton produced)</th>
<th>Emissions Before Control (lbs/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
<th>Emissions After Control (lbs/hr)</th>
<th>Emissions After Control (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pouring/Casting</td>
<td></td>
<td>GHGs</td>
<td>10.00</td>
<td>49.50</td>
<td>216.81</td>
<td>none</td>
<td></td>
<td>49.50</td>
<td>216.81</td>
</tr>
<tr>
<td>Castings Cooling</td>
<td></td>
<td>GHGs</td>
<td>10.00</td>
<td>27.40</td>
<td>120.00</td>
<td>none</td>
<td></td>
<td>27.40</td>
<td>120.00</td>
</tr>
</tbody>
</table>

**GHGs as CO2e emissions is equal to CO2 emissions. CO2 emission factor from American Foundry Society (AFS) Data, "Pouring, Cooling, and Shakeout CO/CO2 Emission Sources and Variability" (AFS 08-031)**

\[
Ef = \text{emission factor}  
Ebc = \text{emissions before control}  
Eac = \text{emissions after control}  
Ebc (ton/yr) = \text{Rate (ton iron/yr)} \times Ef (lb/ton) \times (1 \text{ ton}/2000 \text{ lb})  
Eac (ton/yr) = \frac{Ebc (ton/yr)}{(1 \times \text{ Control Efficiency})}  
\text{Emissions (lb/yr)} = \text{Emissions (ton/yr)} \times (2000 \text{ lb/ton}) \times (1 \text{ yr}/8760 \text{ hr})
\]
### Limited Emissions: Scrap and Charge Handling, Melting, Magnesium Treatment

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41458-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**PermitReviewer:** Ethan Horvath

#### Limited Melt Rate

<table>
<thead>
<tr>
<th>Process/ Source Type</th>
<th>Limited Rate (tons iron/yr)</th>
<th>Emission Factor (lb/ton produced)</th>
<th>Emissions Before Control (lbs/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
<th>Emissions After Control (lbs/hr)</th>
<th>Emissions After Control (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scrap and Charge</strong> Handling - includes process emissions from the Scrap Charge Preheater**</td>
<td>24,000</td>
<td>PM 0.90</td>
<td>2.47</td>
<td>10.8</td>
<td>none</td>
<td>2.47</td>
<td>10.8</td>
<td>2.47</td>
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<tr>
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<td>Pollutant Factors</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM-10</td>
<td></td>
<td>0.36</td>
<td>0.96</td>
<td>4.32</td>
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<td>0.99</td>
<td>4.32</td>
<td>0.99</td>
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<tr>
<td>SO2</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
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<tr>
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<td>VOC</td>
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<tr>
<td>PM-10</td>
<td></td>
<td>1.7E-03</td>
<td>2.1E-02</td>
<td>9.3E-02</td>
<td>none</td>
<td>2.1E-02</td>
<td>9.3E-02</td>
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<tr>
<td>HAPs based on lab analysis</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Lead</td>
<td></td>
<td>7.6E-01</td>
<td>9.6E-02</td>
<td>8.3E-02</td>
<td>none</td>
<td>9.6E-02</td>
<td>8.3E-02</td>
<td>9.6E-02</td>
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</tbody>
</table>

#### Melting - Electric

<table>
<thead>
<tr>
<th>Process/ Source Type</th>
<th>Limited Rate (tons iron/yr)</th>
<th>Emission Factor (lb/ton produced)</th>
<th>Emissions Before Control (lbs/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
<th>Emissions After Control (lbs/hr)</th>
<th>Emissions After Control (ton/yr)</th>
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<tbody>
<tr>
<td><strong>Melting - Electric</strong></td>
<td>24,000</td>
<td>PM 0.90</td>
<td>2.47</td>
<td>10.8</td>
<td>none</td>
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<td>10.8</td>
<td>2.47</td>
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<td>Induction Furnace</td>
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<tr>
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<td>0.96</td>
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<tr>
<td>SO2</td>
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<tr>
<td>PM-10</td>
<td></td>
<td>1.2E-02</td>
<td>1.5E-02</td>
<td>6.1E-02</td>
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<td>1.5E-02</td>
<td>6.1E-02</td>
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<td>HAPs based on lab analysis</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td></td>
<td>1.1E-02</td>
<td>1.4E-02</td>
<td>1.1E-02</td>
<td>none</td>
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#### Magnesium Treatment

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<td>Ebc = emissions before control</td>
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<td>Eac (ton/yr) = Ebc (ton/yr) * (1 - Control Efficiency)</td>
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<td>Emissions (lbs/yr) = Emissions (ton/yr) * (2000 lb/ton) * (1 yr/8760 hr)</td>
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### Limited Emissions: Pouring, Cooling and Shakeout

**Company Name:** Kingsbury Castings Division  
**Address:** 3223 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41648-00078  
**Permit Reviewer:** Ethan Horvath

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**Note:** Additional HAPs emissions are shown on previous pages. See previous page for Methodology.
### Appendix A: Emission Calculations

#### Limited Emissions: Castings Cleaning, Sand Handling, and Cutoff Saw

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41549-00078  
**Permit Reviewer:** Ethan Horvath

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<th>Emission Factor (gr/dscf)</th>
<th>Emissions Before Control (bbl/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
<th>Emissions After Control (bbl/hr)</th>
<th>Emissions After Control (ton/yr)</th>
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<td>Castings Cleaning and Finishing (Shotblaster)</td>
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<td>0.010</td>
<td>26.714</td>
<td>112.63 fabric filter, K1 99.00%</td>
<td>0.257</td>
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<td>0.010</td>
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<td>112.63 fabric filter, K1</td>
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<td>1.126</td>
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<tr>
<td>chrome</td>
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- **Limited Emissions:** Castings Cleaning, Sand Handling, and Cutoff Saw  
- 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.

<table>
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<tr>
<th>Process:</th>
<th>Limited Rate (tons metal/yr)</th>
<th>Pollutant</th>
<th>Emission Factor (lb/ton produced)</th>
<th>Emissions Before Control (tons/yr)</th>
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<th>Type of control</th>
<th>Control Efficiency (%)</th>
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<td>10.6</td>
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<th>Emissions Before Control (tons/yr)</th>
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<th>Control Efficiency (%)</th>
<th>Emissions After Control (tons/yr)</th>
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See page previous pages for methodology for Shakeout, Sand Handling and Cutoff Saw

### Methodology for Castings Cleaning

\[
E_{ac} \text{ (lb/hr)} = \text{Rate} \times \text{Ef} \times (\frac{60 \text{ min/hr}}{7000 \text{ lb/hr}}) \times (1 - \text{Control Efficiency})
\]

\[
E_{bc} \text{ (lb/hr)} = \frac{E_{ac}}{(1 - \text{Control Efficiency})}
\]

\[
E_{em} \text{ (ton/yr)} = \frac{E_{bc} \times (1 \text{ ton/2000 lb}) \times 8760 \text{ hr/yr}}{1 \text{ lb/ton produced}}
\]
# Appendix A: Emission Calculations

## Limited Emissions: Mold and Core Making

**Company Name:** Kingsbury Castings Division  
**Address:** 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
**Significant Source Modification No.:** 091-41459-00078  
**Significant Permit Modification No.:** 091-41488-00078  
**Permit Reviewer:** Ethan Horvath

### Process: Shell Mold Machines

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<th>Pollutant</th>
<th>Emission Factor (lb/ton)</th>
<th>Emissions Before Control (lbs/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
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**Pollutant Factors:**
- **PM-10:** 1.10, 3.01, 13.2, none, 3.01, 13.2
- **SC-04-003-19:** 0.00, 0.00, 0.00, 0.00, 0.78, 3.41

**See below for VOC and Phenol Ef derivation**

### Process: Shell Core Machines

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<th>Rate (tons sand/yr)</th>
<th>Pollutant</th>
<th>Emission Factor (lb/ton)</th>
<th>Emissions Before Control (lbs/hr)</th>
<th>Emissions Before Control (ton/yr)</th>
<th>Type of control</th>
<th>Control Efficiency (%)</th>
<th>Emissions After Control (lbs/hr)</th>
<th>Emissions After Control (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM-10</td>
<td>2,112.00</td>
<td>PM</td>
<td>1.10</td>
<td>0.27</td>
<td>1.2</td>
<td>none</td>
<td>0.27</td>
<td>1.2</td>
<td></td>
</tr>
<tr>
<td>SC-04-003-19</td>
<td></td>
<td>SOP</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>none</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NOx</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>none</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>VOC</td>
<td>0.28</td>
<td>0.07</td>
<td>0.3</td>
<td>none</td>
<td>0.07</td>
<td>0.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CO</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>none</td>
<td>0.00</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Phenol</td>
<td>0.20</td>
<td>0.00</td>
<td>0.2</td>
<td>none</td>
<td>0.05</td>
<td>0.22</td>
<td></td>
</tr>
</tbody>
</table>

**Pollutant Factors:**
- **PM-10:** 1.10, 0.27, 1.2, none, 0.27, 1.2
- **SC-04-003-19:** 0.00, 0.00, 0.00, 0.00, 0.07, 0.30

**See below for VOC and Phenol Ef derivation**

### Methodology

- **VOC Ef =** \( \text{Glue Usage Rate} \times \text{Wt% VOC} \times \text{Flash Off Factor} \times \text{1.1 sand-to-metal ratio} \)  
- **Phenol Ef =** \( \text{Glue Usage Rate} \times \text{Wt% Phenol} \times \text{Flash Off Factor} \times \text{1.1 sand-to-metal ratio} \)

**VOC and Phenol Emission Factors**

- **VOC Ef =** \( \text{Glue Usage Rate} \times \text{Wt% VOC} \times \text{Flash Off Factor} \times \text{1.1 sand-to-metal ratio} \)
- **Phenol Ef =** \( \text{Glue Usage Rate} \times \text{Wt% Phenol} \times \text{Flash Off Factor} \times \text{1.1 sand-to-metal ratio} \)

**The weight loss for VOC emissions from resin evaporation was assumed by the manufacturer’s tests to be negligible due to the high percentage of phenol.**

The weight loss for VOC emissions from resin evaporation was assumed by the manufacturer's tests of the weight loss due to heating pre-coated sand. The emission factor was approved by IDEM, OAQ on 10/6/2005.
## METHODOLOGY

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 (10% safety factor applied).*
Company Name: Kingsbury Castings Division  
Address: 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, IN 46345  
Significant Source Modification No.: 091-41459-00078  
Significant Permit Modification No.: 091-41648-00078  
Permit Reviewer: Ethan Horvath

### Summary

<table>
<thead>
<tr>
<th>Fugitive Source</th>
<th>PTE (ton/yr)</th>
<th>PM</th>
<th>PM10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Loading and Unloading</td>
<td>4.76</td>
<td>2.25</td>
<td></td>
</tr>
<tr>
<td>Sand Storage Piles</td>
<td>7.12</td>
<td>3.37</td>
<td></td>
</tr>
<tr>
<td>Unpaved Roads</td>
<td>0.827</td>
<td>0.253</td>
<td></td>
</tr>
<tr>
<td>Paved Roads</td>
<td>2.001</td>
<td>0.389</td>
<td></td>
</tr>
<tr>
<td>Total Fugitives</td>
<td>14.70</td>
<td>6.26</td>
<td></td>
</tr>
</tbody>
</table>

### Truck Loading and Unloading

<table>
<thead>
<tr>
<th></th>
<th>Capacity (tons sand/hr)</th>
<th>PM Emissions (lbs/hr)</th>
<th>PM10 Emissions (lbs/hr)</th>
<th>PM Emissions (tons/yr)</th>
<th>PM10 Emissions (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Loading/Unloading</td>
<td>3.01</td>
<td>1.09</td>
<td>0.514</td>
<td>4.76</td>
<td>2.25</td>
</tr>
</tbody>
</table>

| Emission Factor (lb/ton) = k x 0.0032 x ((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 |

**Methodology:**
The Emission Factor equation is from AP-42, Chapter 13.2.4

Emissions (lb/hr) = Capacity (ton/hr) * Emission Factor (lb/ton)

Emissions (ton/yr) = Emissions (lb/hr) * (8760 hr/yr) * (1 ton/2000 lb)
Appendix B - PSD Emissions Increase Evaluation

Indiana Department of Environmental Management
Office of Air Quality

<table>
<thead>
<tr>
<th>Source Description and Location</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Source Name:</strong> Kingsbury Castings Division</td>
</tr>
<tr>
<td><strong>Source Location:</strong> 3232 3rd Road Annex, Kingsbury Industrial Park, Kingsbury, Indiana 46345</td>
</tr>
<tr>
<td><strong>County:</strong> LaPorte</td>
</tr>
<tr>
<td><strong>SIC Code:</strong> 3321 (Gray and Ductile Iron Foundries)</td>
</tr>
<tr>
<td><strong>Operation Permit No.:</strong> T 091-40374-00078</td>
</tr>
<tr>
<td><strong>Operation Permit Issuance Date:</strong> May 30, 2019</td>
</tr>
<tr>
<td><strong>Significant Source Modification No.:</strong> 091-41459-00078</td>
</tr>
<tr>
<td><strong>Significant Permit Modification No.:</strong> 091-41648-00078</td>
</tr>
<tr>
<td><strong>Permit Reviewer:</strong> Ethan Horvath</td>
</tr>
</tbody>
</table>

The Office of Air Quality (OAQ) has reviewed an application, submitted by Kingsbury Castings Division on May 17, 2019, relating to the following:

(a) Construction of 2 new shell molding machines. Since these units will be newly constructed, they will be considered new emissions units for this PSD Emissions Increase evaluation.

Two (2) Shell Molding Machines, identified as MOL017 and MOL018, approved in 2019 for construction, each with a maximum capacity of 700.0 pounds per hour of pre-coating sand, 33.25 pounds per hour of binder, and a maximum heat input capacity 1.0 MMBtu/hr, using a release agent with no VOC, using no controls, and exhausting through stacks 13, 14, 17, 15, 16, and 26.

<table>
<thead>
<tr>
<th>Emissions Unit</th>
<th>PM</th>
<th>PM_{10}</th>
<th>PM_{2.5}</th>
<th>SO_{2}</th>
<th>NO_{X}</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL017</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>MOL018</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>Natural Gas Combustion associated with the Molding Machines</td>
<td>0.02</td>
<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.86</td>
<td>0.79</td>
<td>0.72</td>
</tr>
</tbody>
</table>

(b) Construction of a new Mold Sand Handling Operation (Molding Sand Handling System) that will replace an existing Mold Sand Handling Operation (1970) that accounts for approximately 95% of the entire existing Sand Handling Operation. Since this Mold Sand Handling operation will replace an existing operation, it will be considered an existing emission unit for this PSD Emissions Increase evaluation. These Mold Sand Handling Operations have the same nominal capacity.

(1) One (1) Mold Sand Handling Operation, identified as Molding Sand Handling System, with a maximum throughput of 5.45 tons of sand per hour, with six (6) existing bin vent filters as controls (K7, K8, K9, K10, K11, and K12), exhausting indoors, and consisting of the following:

(A) One (1) Pneumatic Conveyor Transporter, identified as CONVEY-1, approved in 2019 for construction, and with a maximum throughput of 20,000 pounds of sand per hour;
(B) Nine (9) Receiving Bins, identified as MOLD BIN-1 through MOLD BIN-9, approved in 2019 for construction, using Bin Vent Filters (MOLD BIN VENT-1 through MOLD BIN VENT-9) as controls, and each with a maximum capacity of 3.0 tons of sand;

(C) One (1) Mold Sand Elevator, identified as ELEV-4, approved in 2019 for construction, and equipped with diverter values to direct sand to the tanks;

(D) One (1) Lump-breaker, identified as LUMP-3, and approved in 2019 for construction; and

(E) Two (2) 110-ton Molding Sand Tanks, approved in 2019 for construction, and using a powered bin vent (MOLD BIN VENT-10) as control.

Below is the uncontrolled unlimited PTE of the Mold Sand Handling Operation:

<table>
<thead>
<tr>
<th>Process</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Handling Operation (Molding Sand Handling System)</td>
<td>85.94</td>
<td>12.89</td>
<td>12.89</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

PSD Emissions Increase

(a) "Hybrid" Applicability Test: ATP and ATPA
Since this project involves the construction of new emissions unit (and/or emissions units considered new for this evaluation) and existing emissions units, a Hybrid applicability test, specified in 326 IAC 2-2-2(d)(5), is used to determine if the project results in a Significant Emissions Increase. A Hybrid applicability test uses both the Actual to Potential (ATP) test for new emissions units and Actual to Projected Actual (ATPA) test for existing emissions units affected by the modification.

(b) New Emissions Units and Existing Emissions Units Affected by the Modification
This project involves both new emissions units and existing emissions units affected by the modification.

(1) New Emissions Unit
Pursuant to 326 IAC 2-2-1(t)(1), a new emissions unit is any emissions unit that is, or will be, newly constructed and that has existed for less than two (2) years from the date the emissions unit first operated.

The following proposed emissions units are considered as new emissions units for this evaluation:

Two (2) Shell Molding Machines (MOL017 and MOL018)

(2) Existing Emissions Unit Affected by the Modification
The following emissions units will be considered existing for the purpose of this ATPA test:

(A) Replacement emissions units. A new emissions unit, that replaces an existing emissions unit and is identical to or functionally equivalent to the replaced emissions unit is a replacement unit. A replacement emissions unit is an existing emissions unit. [326 IAC 2-2-1(tt)]
The following proposed replacement unit will be considered as existing emissions unit for this evaluation:

One (1) Mold Sand Handling Operation (Molding Sand Handling System).

Under PSD Emission rules, Molding Sand Handling System is considered a replacement for the existing Mold Sand Handling Operation, since it will be made up of individual units that will function similarly to the existing units. These Mold Sand Handling Operations have the same nominal capacity. There will be a transition period that both Mold Sand Handling Operations will be operating, however the existing Mold Sand Handling Operation will be required to be removed within 180 days of initial startup of the new Mold Sand Handling Operation (Molding Sand Handling System).

(c) Baseline Actual Emissions
(1) New Emissions Unit
For a new emissions unit, the baseline actual emissions for purposes of determining the Emissions Increase that will result from the initial construction and operation of the unit shall equal zero (0) and thereafter, for all other purposes, shall equal the unit's potential to emit.

(2) Existing Emissions Units
The baseline actual emissions from the existing emissions unit (sand handling operation) involved in this ATPA applicability test are based on their emissions from 2017 through 2018.

See Appendix A of this Technical Support Document for details.

(d) Hybrid Test: ATP and ATPA Summary
The Emissions Increase of the project is the sum of the Emissions Increase for each emissions unit, calculated using the Actual to Potential (ATP) test for the new emissions units and the Actual to Projected Actual (ATPA) test for existing emissions units.

Hybrid Applicability Test = ATP_{(new unit)} + ATPA_{(existing unit)}

(e) Actual to Potential (ATP) Summary
An Actual to Potential (ATP) applicability test has been conducted for the new emissions units and/or the emissions units considered new for this evaluation.

\[
ATP_{(new \ unit)} = PTE_{(new \ unit)} - \text{Baseline Emissions}_{(new \ unit)}
\]

<table>
<thead>
<tr>
<th>Emissions Units</th>
<th>PM</th>
<th>PM_{10}</th>
<th>PM_{2.5}</th>
<th>SO_{2}</th>
<th>NO_{x}</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL017</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTE</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>Baseline Emissions</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ATP</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>MOL018</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTE</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
</tr>
<tr>
<td>Baseline Emissions</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ATP</td>
<td>1.34</td>
<td>1.34</td>
<td>1.34</td>
<td>0.00</td>
<td>0.00</td>
<td>0.37</td>
<td>0.00</td>
</tr>
</tbody>
</table>
### New Emissions Units ATP (tons/year)

<table>
<thead>
<tr>
<th>Emissions Units</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas combustion associated with the molding machines</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PTE</td>
<td>0.02</td>
<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.86</td>
<td>0.79</td>
<td>0.72</td>
</tr>
<tr>
<td>Baseline Emissions</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ATP</td>
<td>0.02</td>
<td>0.07</td>
<td>0.07</td>
<td>0.01</td>
<td>0.86</td>
<td>0.79</td>
<td>0.72</td>
</tr>
<tr>
<td>Total (ATP)</td>
<td>2.70</td>
<td>2.75</td>
<td>2.75</td>
<td>0.01</td>
<td>0.86</td>
<td>1.53</td>
<td>0.72</td>
</tr>
</tbody>
</table>

### Actual to Projected Actual (ATPA) Summary

An Actual to Projected Actual (ATPA) applicability test has been conducted for the existing emissions units under this evaluation.

ATPA $\text{(existing unit)} = \text{Projected Actual Emissions} - \text{Baseline Emissions}$

See Appendix A of this Technical Support Document for detailed emission calculations.

### Existing Emissions Unit ATPA (tons/year)

<table>
<thead>
<tr>
<th>Process/Emissions Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molding Sand Handling System</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Projected Actual Emissions</td>
<td>2.57</td>
<td>0.39</td>
<td>0.39</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Baseline Actual Emissions</td>
<td>1.86</td>
<td>0.28</td>
<td>0.28</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>ATP</td>
<td>0.71</td>
<td>0.11</td>
<td>0.11</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

### Project Emissions Increase Summary

<table>
<thead>
<tr>
<th>Process/Emissions Unit</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOL017 and MOL018 (ATP)</td>
<td>2.7</td>
<td>2.75</td>
<td>2.75</td>
<td>0.01</td>
<td>0.86</td>
<td>1.53</td>
<td>0.72</td>
</tr>
<tr>
<td>Molding Sand Handling System (ATPA)</td>
<td>0.71</td>
<td>0.11</td>
<td>0.11</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Project Emissions Increase</td>
<td>3.41</td>
<td>2.86</td>
<td>2.86</td>
<td>0.01</td>
<td>0.86</td>
<td>1.53</td>
<td>0.72</td>
</tr>
<tr>
<td>Significant Levels</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>100</td>
</tr>
</tbody>
</table>

*PM2.5 listed is direct PM2.5.

### Increase Utilization

The source-wide operation is bottlenecked by the maximum metal melting rate from the existing Electric Induction Furnaces. Since the metal and sand have a 1:1 ratio for production, the Sand Handling Operation cannot produce more sand than metal produced. Likewise the entire Shell Mold Operation is unable to utilize more sand than metal. Therefore, there will be no increase or decrease in utilization upstream or downstream from the Sand Handling Operation and Shell Mold Machines. The increase in actual emissions detailed above for the Sand Handling Operation is due to using a more conservative estimate of the sand throughput, in order to better account for small fluctuations.
(h) Conclusion
The Permittee has provided information as part of the application for this approval that based on the Hybrid test in 326 IAC 2-2-2 that this modification to an existing major PSD stationary source will not be major because the Emissions Increase of each PSD regulated pollutant is less than the PSD significant levels (i.e., the modification does not cause a Significant Emissions Increase). The applicant will be required to keep records and report in accordance with 326 IAC 2-2-8 (Prevention of Significant Deterioration (PSD) Requirements: Source Obligation).
September 10, 2019

Earl Miller
Kingsbury Castings Division
PO Box 639
La Porte, IN 46352

Re: Public Notice
Kingsbury Castings Division
Permit Level: Title V Significant Source Mod. (Minor PSD/EO) (120) & Title V Significant Permit Modification
Permit Number: 091-41459-00078 & 091-41648-00078

Dear Earl Miller:

Enclosed is a copy of your draft Title V Significant Source Mod. (Minor PSD/EO) (120) & Title V Significant Permit Modification, Technical Support Document, emission calculations, and the Public Notice.

The Public Notice period will begin the date the Notice is published on the IDEM Official Public Notice website. Publication has been requested and is expected within 2-3 business days. You may check the exact Public Notice begins and ends date here: https://www.in.gov/idem/5474.htm

Please note that as of April 17, 2019, IDEM is no longer required to publish the notice in a newspaper.

OAQ has submitted the draft permit package to the LaPorte Co Public Library - LaPorte Branch 904 Indiana Ave. LaPorte IN 46350-4307. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Ethan Horvath, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 3-8397 or dial (317) 233-8397.

Sincerely,

[Signature]

L. Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover Letter 4/12/19
September 10, 2019

To: LaPorte Co Public Library - LaPorte Branch 904 Indiana Ave. LaPorte IN 46350-4307 (Library)

From: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

Subject: Important Information to Display Regarding a Public Notice for an Air Permit

Applicant Name: Kingsbury Castings Division
Permit Number: 091-41459-00078 & 091-41648-00078

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. Please make this information readily available until you receive a copy of the final package.

If you have any questions concerning this public review process, please contact Joanne Smiddle-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library updated 4/2019
Notice of Public Comment

September 10, 2019
Kingsbury Castings Division
091-41459-00078 & 091-41648-00078

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has posted on IDEM’s Public Notice website at [https://www.in.gov/idem/5474.htm](https://www.in.gov/idem/5474.htm).

The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana’s Air Permitting Program.

Please Note: If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.
AFFECTED STATE NOTIFICATION OF PUBLIC COMMENT PERIOD
DRAFT INDIANA AIR PERMIT

September 10, 2019

A 30-day public comment period has been initiated for:

Permit Number: 091-41459-00078 & 091-41648-00078
Applicant Name: Kingsbury Castings Division
Location: Kingsbury, Laporte County, Indiana

The public notice, draft permit and technical support documents can be accessed via the IDEM Air Permits Online site at:
http://www.in.gov/ai/appfiles/idem-caats/

Questions or comments on this draft permit should be directed to the person identified in the public notice by telephone or in writing to:

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

Questions or comments regarding this email notification or access to this information from the EPA Internet site can be directed to Chris Hammack at chammack@idem.IN.gov or (317) 233-2414.
**Mail Code 61-53**

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<td>IDEM Staff</td>
<td>Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204</td>
<td>CERTIFICATE OF MAILING ONLY</td>
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<td>Daniel Luck President Kingsbury Castings Division PO Box 639 La Porte IN 46352 (RO CAATS)</td>
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<td>Mr. Dick Paulen Barnes &amp; Thornburg 52700 Independence Court, Suite 150 Elkhart IN 46514-8155 (Affected Party)</td>
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<td>Jeff Mayes News-Dispatch 422 Franklin St Michigan City IN 46360 (Affected Party)</td>
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