



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

*We Protect Hoosiers and Our Environment.*

*Mitchell E. Daniels Jr.*  
Governor

*Thomas W. Easterly*  
Commissioner

100 North Senate Avenue  
Indianapolis, Indiana 46204  
(317) 232-8603  
Toll Free (800) 451-6027  
[www.idem.IN.gov](http://www.idem.IN.gov)

TO: Interested Parties / Applicant

DATE: May 6, 2009

RE: Ball Brass & Aluminum Foundry / 033-27226-00037

FROM: Matthew Stuckey, Branch Chief  
Permits Branch  
Office of Air Quality

## Notice of Decision: Approval - Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures  
FNPER.dot12/03/07



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## Minor Source Operating Permit Renewal OFFICE OF AIR QUALITY

**Ball Brass and Aluminum Foundry  
520 Hazel Street  
Auburn, Indiana 46706**

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

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a MSOP under 326 IAC 2-6.1.

Operation Permit No.: M033-27226-00037	
Issued by:  Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: May 6, 2009  Expiration Date: May 6, 2019

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## SECTION A

## SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 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 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

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The Permittee owns and operates a stationary brass and aluminum foundry.

Source Address:	520 Hazel Street, Auburn, Indiana 46706
Mailing Address:	P.O. Box 110, Auburn, Indiana 46706
General Source Phone Number:	260-925-3517
SIC Code:	3365
County Location:	DeKalb
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

This source consists of an aluminum and brass foundry facilities processing clean aluminum and brass charge along with aluminum and brass scrap generated within the source. The source does not use secondary scrap brought from other sources. Therefore, it is not considered a secondary metal production source, is not in one (1) of the twenty-eight (28) source categories as listed in 326 IAC 2-2-1(gg)(1) (Major Stationary Source) and fugitive emissions are not counted toward determination of PSD applicability.

### A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) Three (3) electric induction brass melting furnaces, identified as Unit 1, 2 and 3, each with a maximum throughput rate of 167 pounds of brass ingots per hour, using a wheelabrator dust collector, identified as DC-3, as control, and exhausting to stacks EIF-1, 2 and 3, constructed in 1976.
- (b) Five (5) gas fired aluminum melting furnaces, with a combined heat input capacity of 15 MMBtu per hour and each with a maximum throughput rate of 75 pounds of aluminum ingots and flux per hour, with no control, constructed in 1974.

The three (3) electric induction brass melting furnaces and the five (5) gas fired aluminum melting furnaces shall only melt clean charge, customer returns, or internal scrap as defined under 40 CFR 63.1503.

- (c) One (1) brass foundry facility consisting of:
  - 1. One (1) brass castings operation, with a maximum throughput rate of 500 pounds per hour. constructed in 1976.
  - 2. One (1) pouring/cooling operation, with a maximum throughput rate of 500 pounds per hour. constructed in 1976.
  - 3. One (1) sand handling operation with a maximum throughput rate of 500 pounds per hour. constructed in 1976. The brass sand handling system consists of one

- (1) silo, mullers, bucket elevators, conveyors, six (6) molders, and one (1) shakeout conveyor.
4. One (1) shakeout unit, with a maximum throughput rate of 500 pounds per hour. The shakeout unit is controlled by one (1) wheelabrator dust collector, identified as DC-2, which exhausts at stack DC-2, constructed in 1976.
- (d) One (1) aluminum foundry facility consisting of:
1. One (1) aluminum castings operation, with a maximum throughput capacity of 375 pounds per hour, constructed in 1974, with no control.
  2. One (1) pouring/cooling operation, with a maximum throughput capacity of 375 pounds per hour, constructed in 1974, with no control.
  3. One (1) aluminum fluxing operation, with a maximum throughput capacity of 0.20 pounds per hour, constructed in 1974, with no control.
  4. One (1) aluminum sand handling system consisting of one (1) silo with a cyclone on the silo filling for control, mullers, bucket elevators, conveyors, one (1) molder, and one (1) shakeout conveyor.
  5. One (1) manual shakeout, with a maximum throughput capacity of 375 pounds per hour; constructed in 1974, with no control.
- (e) One(1) tumble cleaning unit, with a maximum capacity of 600 pounds of castings per hour, using a wheelabrator dust collector, identified as DC-1 as control and exhausting at stack DC-1, installed in 1983.
- (f) Two (2) tumble cleaning units, each with a maximum capacity of 300 pounds of castings per hour, using a wheelabrator dust collector, identified as DC-1, as control and exhausting to stack DC-1, installed in 2003.
- (g) Two (2) aluminum abrasive grinders, each with a maximum throughput rate of 188 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting to stack EV-13, installed in 1976.
- (h) Four (4) brass abrasive grinders, each with a maximum throughput rate of 125 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting to stack EV-4, installed in 1976.
- (i) One (1) reclaimer (metal reclaimer from waste sand), with a maximum throughput rate of 1000 pounds per hour, using a baghouse, identified as DC-4 as control, installed in 1983.
- (j) Two (2) brass cut off saws, with a combined throughput capacity of 375 pounds per hour and controlled by two (2) cyclones, identified as C-1 and C-2, installed in 1976.
- (k) Eleven (11) natural gas fired space heaters, with a combined heat input capacity of 2.25 MMBtu per hour, installed in 1994.
- (l) Two (2) natural gas fired core bake ovens, with a combined heat input capacity of 1.0 MMBtu per hour.
- (m) One (1) natural gas fired heat treat bath, with a maximum heat input capacity of 1.5 MMBtu per hour.
- (n) Paved and unpaved roads.

- (o) Scrap handling operation, consisting of hand charging the induction furnace using gates and risers and remelted ingots from inhouse operations, with a maximum 20% scrap rate for each new charge. Scrap storage is contained inside the facility.

## **SECTION B GENERAL CONDITIONS**

### **B.1 Definitions [326 IAC 2-1.1-1]**

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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 2-1.1-1) shall prevail.

### **B.2 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]**

- 
- (a) This permit, M033-27226-00037, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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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**

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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**

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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**

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

### **B.7 Duty to Provide Information**

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- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

### **B.8 Certification**

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- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by an "authorized individual" of truth, accuracy, and completeness. This

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

- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

**B.9 Annual Notification [326 IAC 2-6.1-5(a)(5)]**

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- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) The annual notice shall be submitted in the format attached no later than March 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
- (c) The notification 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.

**B.10 Preventive Maintenance Plan [326 IAC 1-6-3]**

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- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall maintain and implement Preventive Maintenance Plans (PMPs) 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.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

**B.11 Prior Permits Superseded [326 IAC 2-1.1-9.5]**

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- (a) All terms and conditions of permits established prior to M033-27226-00037 and issued pursuant to permitting programs approved into the state implementation plan have been either:

- (1) incorporated as originally stated,
- (2) revised, or
- (3) deleted.

(b) All previous registrations and permits are superseded by this permit.

**B.12 Termination of Right to Operate [326 IAC 2-6.1-7(a)]**

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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 one hundred twenty (120) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

**B.13 Permit Renewal [326 IAC 2-6.1-7]**

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- (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 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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 one hundred twenty (120) days 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 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ any additional information identified as being needed to process the application.

**B.14 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]**

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- (a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 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 shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

#### B.15 Source Modification Requirement

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

#### B.16 Inspection and Entry

[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

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

#### B.17 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 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

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

- (c) The Permittee may implement notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

**B.18 Annual Fee Payment [326 IAC 2-1.1-7]**

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- (a) The Permittee shall pay annual fees due within thirty (30) calendar days of receipt of a bill from IDEM, OAQ,.
- (b) 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.19 Credible Evidence [326 IAC 1-1-6]**

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

**SECTION C**

**SOURCE OPERATION CONDITIONS**

Entire Source

**Emission Limitations and Standards [326 IAC 2-6.1-5(a)(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 Permit Revocation [326 IAC 2-1.1-9]**

Pursuant to 326 IAC 2-1.1-9 (Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

**C.3 Opacity [326 IAC 5-1]**

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

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

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

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

**C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]**

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

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

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

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

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

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

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

All required notifications shall be submitted to:

Indiana Department of Environmental Management  
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 by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (e) **Procedures for Asbestos Emission Control**  
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three

(3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

- (f) **Demolition and Renovation**  
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana 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 2-6.1-5(a)(2)]**

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

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

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

Indiana Department of Environmental Management  
Compliance 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 certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ 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.10 Compliance Requirements [326 IAC 2-1.1-11]**

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

### **Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]**

#### **C.11 Compliance Monitoring [326 IAC 2-1.1-11]**

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Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

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

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

#### **C.13 Instrument Specifications [326 IAC 2-1.1-11]**

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- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

### **Corrective Actions and Response Steps**

#### **C.14 Response to Excursions or Exceedances**

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

**C.15 Actions Related to Noncompliance Demonstrated by a Stack Test**

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

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

**Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]**

**C.16 Malfunctions Report [326 IAC 1-6-2]**

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Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.17 General Record Keeping Requirements [326 IAC 2-6.1-5]

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

C.18 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of 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
- (b) 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.
- (c) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (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.

**SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

- (a) Three (3) electric induction brass melting furnaces, identified as Unit 1, 2 and 3, each with a maximum throughput rate of 167 pounds of brass ingots per hour, using a wheelabrator dust collector, identified as DC-3, as control and exhausting to stacks EIF-1, 2 and 3, constructed in 1976.
- (b) Five (5) gas fired aluminum melting furnaces, with a combined heat input capacity of 15 MMBtu per hour and each with a maximum throughput rate of 75 pounds of aluminum ingots and flux per hour, constructed in 1974.
- (c) One (1) brass foundry facility consisting of:
  - 1. One (1) brass castings operation, with a maximum throughput rate of 500 pounds per hour. constructed in 1976.
  - 2. One (1) pouring/cooling operation, with a maximum throughput rate of 500 pounds per hour. constructed in 1976.
  - 3. One (1) sand handling operation with a maximum throughput rate of 500 pounds per hour. constructed in 1976. The brass sand handling system consists of one (1) silo, mullers, bucket elevators, conveyors, six (6) molders, and one (1) shakeout conveyor.
  - 4. One (1) shakeout unit, with a maximum throughput rate of 500 pounds per hour. The shakeout unit is controlled by one (1) wheelabrator dust collector, identified as DC-2, which exhausts at stack DC-2, constructed in 1976.
- (d) One (1) aluminum foundry facility consisting of:
  - 1. One (1) aluminum castings operation, with a maximum throughput capacity of 375 pounds per hour, constructed in 1974, with no control.
  - 2. One (1) pouring/cooling operation, with a maximum throughput capacity of 375 pounds per hour, constructed in 1974, with no control.
  - 3. One (1) aluminum fluxing operation, with a maximum throughput capacity of 0.20 pounds per hour, constructed in 1974, with no control.
  - 4. One (1) aluminum sand handling system consisting of one (1) silo with a cyclone on the silo filling for control, mullers, bucket elevators, conveyors, one (1) molder, and one (1) shakeout conveyor.
  - 5. One (1) manual shakeout, with a maximum throughput capacity of 375 pounds per hour; constructed in 1974, with no control.

(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 2-6.1-5(a)(1)]**

**D.1.1 Clean Charge [40 CFR 63, Subpart RRR][326 IAC 2-2]**

- (1) The three (3) electric induction brass melting furnaces and the five (5) gas fired aluminum melting furnaces shall only melt clean charge, customer returns, or internal scrap as

defined under 40 CFR 63.1503. Compliance with this renders the requirements of 40 CFR 63, Subpart RRR and 326 IAC 2-2-1(gg)(1) (Major Stationary Source) not applicable.

- (2) The three (3) electric induction brass melting furnaces and the five (5) gas fired aluminum melting furnaces shall melt only clean charge as defined by the Secondary Aluminum NESHAP in 40 CFR 63 Subpart RRR.

Compliance with this shall render the requirements of 326 IAC 2-2-1(gg)(1) (Major Stationary Source) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Aluminum Production, 326 IAC 20-70 (40 CFR 63.1500, Subpart RRR) not applicable.

- (3) The casting operations, shall only melt clean charge, internal scrap, or customer returns, as defined by the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Aluminum Production, 40 CFR 63.1503, Subpart RRR.

Compliance with this shall render the requirements of 326 IAC 2-2-1(gg)(1) (Major Stationary Source) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Secondary Aluminum Production, 326 IAC 20-70 (40 CFR 63.1500, Subpart RRR) not applicable.

- (4) As of March 24, 2003, the effective date of the NESHAP for secondary aluminum production (40 CFR Part 63, Subpart RRR), Ball Brass and Aluminum Foundry shall melt only "clean charge," "customer returns," or "internal scrap" and shall not operate a "thermal chip dryer" as each is defined in 40 CFR 63.1503. Violation of this condition would cause the source to be considered a secondary metal production facility for purposes of 40 CFR 63.1503.

Violation of this condition may also constitute a violation of 326 IAC 2-2 (PSD).

Compliance with this condition renders the requirements of 40 CFR 63, Subpart RRR and 326 IAC 2-2 (PSD) not applicable.

D.1.2 Particulate [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the brass and aluminum foundry shall not exceed the particulate emission limits in pounds per hour as shown in the table below.

Emission Units	Process Weight		Particulate Emission Limit (lbs/hour)
	(lbs/hour)	(tons/hour)	
Each of the 5 Aluminum Melting Furnaces	75	0.038	0.45
Each of the 3 Brass Furnaces	167	0.08	0.78
Brass Castings	500	0.25	1.62
Brass Pouring/Castings	500	0.25	1.62
Brass Sand Handling	500	0.25	1.62
Brass Shakeout	500	0.25	1.62
Aluminum Castings	375	0.188	1.34
Aluminum Pouring/Cooling	375	0.188	1.34
Aluminum Sand Handling	375	0.188	1.34
Aluminum Manual Shakeout	375	0.188	1.34

The pounds per hour limitation was calculated using 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

- (b) Pursuant to 326 IAC 6-3-2(e)(2), the particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) and 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. Therefore, the five (5) aluminum furnaces shall each not exceed 0.551 pounds per hour.

#### D.1.3 Preventive Maintenance Plan [326 IAC 1-6-3]

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A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this equipment and any control devices.

### **Compliance Determination Requirements**

#### D.1.4 Particulate Control

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In order to comply with D.1.2 the two (2) wheelabrator dust collectors (DC-2 and DC-3) for particulate control shall be in operation and control emissions from the three (3) electric induction brass melting furnaces and the brass foundry facility at all times that the three (3) electric induction brass melting furnaces and the brass foundry facility are in operation.

**SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS**

**Emissions Unit Description:**

- (e) One(1) tumble cleaning unit, with a maximum capacity of 600 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting to stack DC-1, installed in 1983.
- (f) Two (2) tumble cleaning units, each with a maximum capacity of 300 pounds of castings per hour, using a wheelabrator dust collector (identified as DC-1) as control and exhausting to stack DC-1, installed in 2003.
- (g) Two (2) aluminum abrasive grinders, each with a maximum throughput rate of 188 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting to stack EV-13, installed in 1976.
- (h) Four (4) brass abrasive grinders, each with a maximum throughput rate of 125 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting to stack EV-4, installed in 1976.
- (i) One (1) reclaimer, metal reclaimer from waste sand, with a maximum throughput rate of 1000 pounds per hour, using a baghouse (identified as DC-4) as control, installed in 1983.
- (j) Two (2) brass cut off saws, with a combined throughput capacity of 375 pounds per hour and controlled by two (2) cyclones, identified as C-1 and C-2, installed in 1976.

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

**Emission Limitations and Standards**

**D.2.1 Particulate [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from six (6) abrasive grinders, three (3) tumble cleaning units, one (1) metal reclaimer, and two (2) brass cutoff saws shall not exceed the particulate emission limits in pounds per hour as shown in the table below.

Emission Units	Process Weight		Particulate Emission Limit (lbs/hour)
	(lbs/hour)	(tons/hour)	
Each of the 2 Aluminum Abrasive Grinders	187.5	0.094	0.84
Each of the 4 Brass Abrasive Grinders	125	0.063	0.64
1 Tumble Cleaning Unit	600	0.30	1.83
Each of the 2 Tumble Cleaning Units	300	0.15	1.15
Each of the 2 Brass Cut-off Saws	187.5	0.094	0.84
1 Metal Reclaimer	1000	0.50	2.58

The pounds per hour limitation was calculated using 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.2.2 Preventive Maintenance Plan [326 IAC 1-6-3]

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A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this equipment and any control devices.

### **Compliance Determination Requirements**

#### D.2.3 Particulate Control

---

In order to comply with D.2.1, the wheelabrator dust collector (DC-1), Torit dust collectors, one (1) baghouse (DC-4) and cyclones (C-1 and C-2) for particulate control shall be in operation and control emissions from the three (3) tumble cleaning units, two (2) brass and four (4) aluminum grinders, one (1) metal reclaimer and two (2) brass cut-off saws at all times that the tumble cleaning units, grinders, metal reclaimer and cut-off saws are in operation.

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

**MINOR SOURCE OPERATING PERMIT (MSOP)  
CERTIFICATION**

Source Name: Ball Brass and Aluminum Foundry  
Source Address: 520 Hazel Street, Auburn, Indiana 46706  
Mailing Address: P.O. Box 110, Auburn, Indiana 46706  
MSOP No.: M033-27226-00037

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

Please check what document is being certified:

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

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

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH**

**MINOR SOURCE OPERATING PERMIT  
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

<b>Company Name:</b>	Ball Brass and Aluminum Foundry
<b>Address:</b>	520 Hazel Street
<b>City:</b>	Auburn, Indiana 46706
<b>Phone #:</b>	260-925-3517
<b>MSOP #:</b>	M033-27226-00037

I hereby certify that Ball Brass and Aluminum Foundry is :  still in operation.  
 no longer in operation.  
I hereby certify that Ball Brass and Aluminum Foundry is :  in compliance with the requirements of  
MSOP M033-27226-00037.  
 not in compliance with the requirements of  
MSOP M033-27226-00037.

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

<b>Noncompliance:</b>

**MALFUNCTION REPORT**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
FAX NUMBER: (317) 233-6865**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?\_\_\_\_\_, 25 TONS/YEAR SULFUR DIOXIDE ?\_\_\_\_\_, 25 TONS/YEAR NITROGEN OXIDES?\_\_\_\_\_, 25 TONS/YEAR VOC ?\_\_\_\_\_, 25 TONS/YEAR HYDROGEN SULFIDE ?\_\_\_\_\_, 25 TONS/YEAR TOTAL REDUCED SULFUR ?\_\_\_\_\_, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?\_\_\_\_\_, 25 TONS/YEAR FLUORIDES ?\_\_\_\_\_, 100 TONS/YEAR CARBON MONOXIDE ?\_\_\_\_\_, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?\_\_\_\_\_, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?\_\_\_\_\_, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?\_\_\_\_\_, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?\_\_\_\_\_. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION \_\_\_\_\_.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC \_\_\_\_\_ OR, PERMIT CONDITION # \_\_\_\_\_ AND/OR PERMIT LIMIT OF \_\_\_\_\_

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ?    Y    N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ?    Y    N

COMPANY: \_\_\_\_\_ PHONE NO. (    ) \_\_\_\_\_  
LOCATION: (CITY AND COUNTY) \_\_\_\_\_  
PERMIT NO. \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_  
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/20\_\_\_\_    \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/20\_\_\_\_    \_\_\_\_\_ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: \_\_\_\_\_

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

\*SEE PAGE 2

**Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1 Applicability of rule**

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

**326 IAC 1-2-39 "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

**\*Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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

Addendum to the Technical Support Document (ATSD) for a  
Minor Source Operating Permit Renewal

**Source Background and Description**

<b>Source Name:</b>	<b>Ball Brass and Aluminum Foundry</b>
<b>Source Location:</b>	<b>520 Hazel Street, Auburn, Indiana 46706</b>
<b>County:</b>	<b>DeKalb</b>
<b>SIC Code:</b>	<b>3365</b>
<b>Operation Permit No.:</b>	<b>F 033-27226-00037</b>
<b>Permit Reviewer:</b>	<b>Janet Mobley</b>

On April 1, 2009, the Office of Air Quality (OAQ) had a notice published in Auburn Evening Star, Auburn, Indiana, stating that Ball Brass and Aluminum Foundry had applied for a Minor Source Operating Permit Renewal to continue to operate a stationary brass and aluminum foundry operation. The notice also stated that the OAQ proposed to issue a MSOP Renewal for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

**Comments and Responses**

No comments were received during the public notice period.

**Additional Changes**

IDEM is documenting that the source was evaluated to determine if the New Source Performance Standards (NSPS) UUU's applied after the permit was public noticed. The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, and no changes were made to the Permit. The additional language is provided below:

The requirements of the New Source Performance Standard for Calciners and Dryers in Mineral Industries, 40 CFR Part 60.730, Subpart UUU, are not included in the permit because Ball Brass and Aluminum Foundry utilizes mechanical sand reclamation and not thermal sand reclamation. Pursuant to EPA's Applicability Determination Index (ADI) database (<http://www.epa.gov/compliance/monitoring/programs/caa/adi.html>) posting dated April 29, 2004 (Control Number: 0500056), emission units used in the reclamation of foundry sand that remove water through direct or indirect heating meet the definition of calciners and dryers as defined in 40 CFR 60.731. However, mechanical sand reclamation does not meet this definition since heat is not being added for the reclamation of the sand.

<b>IDEM Contact</b>
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- (a) Questions regarding this proposed MSOP Renewal can be directed to Janet Mobley at the 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) 234-5373 or toll free at 1-800-451-6027 extension 4-5373.
  
- (b) A copy of the permit is available on the Internet at: <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's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov)

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

**Technical Support Document (TSD) for a Minor Source Operating Permit Renewal**

**Source Background and Description**

<b>Source Name:</b>	<b>Ball Brass and Aluminum Foundry</b>
<b>Source Location:</b>	<b>520 Hazel Street, Auburn, Indiana 46706</b>
<b>County:</b>	<b>DeKalb</b>
<b>SIC Code:</b>	<b>3365</b>
<b>Permit Renewal No.:</b>	<b>033-27226-00037</b>
<b>Permit Reviewer:</b>	<b>Janet Mobley</b>

The Office of Air Quality (OAQ) has reviewed the operating permit renewal application from Ball Brass and Aluminum Foundry relating to the operation of a stationary brass and aluminum foundry.

**History**

On December 5, 2008, Ball Brass and Aluminum Foundry submitted an application to the OAQ requesting to renew its operating permit. Ball Brass and Aluminum Foundry was issued a New Source Construction and Minor Source Operating Permit on March 19, 2004.

Ball Brass and Aluminum Foundry consists of an aluminum and brass foundry facilities processing clean aluminum and brass charge along with aluminum and brass scrap generated within the source. The source does not use secondary scrap brought from other sources. Therefore, it is not considered a secondary metal production source and is not in one (1) of the twenty-eight (28) source categories.

**Permitted Emission Units and Pollution Control Equipment**

- (a) Three (3) electric induction brass melting furnaces, identified as Unit 1, 2 and 3, each with a maximum throughput rate of 167 pounds of brass ingots per hour, using a wheelabrator dust collector, identified as DC-3 as control, constructed in 1976, and exhausting at stacks EIF-1, 2 and 3.
- (b) Five (5) gas fired aluminum melting furnaces, with a combined heat input capacity of 15 MMBtu per hour and each with a maximum throughput rate of 75 pounds of aluminum ingots and flux per hour, with no control, constructed in 1974.
- (c) One (1) brass foundry facility consisting of:
  - 1. One (1) brass castings operation, with a maximum throughput rate of 500 pounds per hour. constructed in 1976.
  - 2. One (1) pouring/cooling operation, with a maximum throughput rate of 500 pounds per hour. constructed in 1976.
  - 3. One (1) sand handling operation with a maximum throughput rate of 500 pounds per hour, constructed in 1976. The brass sand handling system consists of one one (1) silo, mullers, bucket elevators, conveyors, six (6) molders, and one (1) shakeout conveyor.

4. One (1) shakeout unit, with a maximum throughput rate of 500 pounds per hour. The shakeout unit is controlled by one (1) wheelabrator dust collector, identified as DC-2, which exhausts at stack DC-2, constructed in 1976.
- (d) One (1) aluminum foundry facility consisting of:
1. One (1) aluminum castings operation, with a maximum throughput rate of 375 pounds per hour. constructed in 1974, with no control.
  2. One (1) pouring/cooling operation, with a maximum throughput rate of 375 pounds per hour. constructed in 1974, with no control.
  3. One (1) aluminum fluxing operation, with a maximum throughput capacity of 0.20 pounds per hour, constructed in 1974, with no control.
  4. One (1) aluminum sand handling operation with a maximum throughput rate of 375 pounds per hour. constructed in 1974. The aluminum sand handling system consists of one (1) silo with a cyclone on the silo filling for control, mullers, bucket elevators, conveyors, one (1) molder, and one (1) shakeout conveyor, controlled by cyclone on the silo filling.
  5. One (1) manual shakeout unit, with a maximum throughput rate of 375 pounds per hour, constructed in 1974, with no control.
- (e) One(1) tumble cleaning unit, with a maximum capacity of 600 pounds of castings per hour, using a wheelabrator dust collector, identified as DC-1, as control and exhausting to stack DC-1, installed in 1983.
- (f) Two (2) tumble cleaning units, each with a maximum capacity of 300 pounds of castings per hour, using a wheelabrator dust collector, identified as DC-1, as control and exhausting to stack DC-1, installed in 2003.
- (g) Two (2) aluminum abrasive grinders, each with a maximum throughput rate of 188 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting to stack EV-13, installed in 1976.
- (h) Four (4) brass abrasive grinders, each with a maximum throughput rate of 125 pounds of castings per hour, controlled by one (1) Torit dust collector, and exhausting to stack EV-4, installed in 1976.
- (i) One (1) reclaimer (metal reclaimer from waste sand), with a maximum throughput rate of 1000 pounds per hour, using a baghouse, identified as DC-4 as control, installed in 1983.
- (j) Two (2) brass cut off saws, with a combined throughput capacity of 375 pounds per hour and controlled by two (2) cyclones, identified as C-1 and C-2, installed in 1976.
- (k) Eleven (11) natural gas fired space heaters, with a combined heat input capacity of 2.25 MMBtu per hour, installed in 1994.
- (l) Two (2) natural gas fired core bake ovens, with a combined heat input capacity of 1.0 MMBtu per hour.
- (m) One (1) natural gas fired heat treat bath, with a maximum heat input capacity of 1.5 MMBtu per hour.
- (n) Paved and unpaved roads.

- (o) Scrap handling operation, consisting of hand charging the induction furnace using gates and risers and remelted ingots from inhouse operations, with a maximum 20% scrap rate for each new charge. Scrap storage is contained inside.

### **Emission Units and Pollution Control Equipment Constructed and/or Operated without a Permit**

The source does not have any emission units that were constructed and/or is operating without a permit during this review.

### **Emission Units and Pollution Control Equipment Removed From the Source**

- (a) One (1) electric induction brass melting furnace, identified as Unit 4, with a maximum throughput capacity of 167 pounds of brass ingots and flux per hour, using a wheelabrator dust collector (identified as DC-3) as control and exhausting at stacks EIF-4, permitted to be constructed in 2003. The Eif -4Pillar Brass melting induction furnace was tested but was not installed and the unit is now removed from the source.
- (b) The 125 gallon Safety Kleen parts washing tank was removed from the source.

### **Existing Approvals**

Since the issuance of the MSOP (033-17792-00037) on March 29, 2004, the source has constructed or has been operating under the following approvals as well:

Notice Only Change No. (033-20225-0037) issued on June 30, 2005

All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

### **Enforcement Issue**

There are no enforcement actions pending.

### **Emission Calculations**

See Appendix A of this document for detailed emission calculations.

### **County Attainment Status**

The source is located in DeKalb County.

Pollutant	Designation
SO <sub>2</sub>	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O <sub>3</sub>	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard. <sup>1</sup>
PM <sub>10</sub>	Unclassifiable effective November 15, 1990.
NO <sub>2</sub>	Cannot be classified or better than national standards.
Pb	Not designated.

<sup>1</sup>Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.  
Unclassifiable or attainment effective April 5, 2005, for PM2.5.

- (a) Ozone Standards
- (1) On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.
  - (2) On September 6, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Allen, Clark, Elkhart, Floyd, LaPorte, and St. Joseph as attainment for the 8-hour ozone standard.
  - (3) On November 9, 2007, the Indiana Air Pollution Control Board finalized a temporary emergency rule to re-designate Boone, Clark, Elkhart, Floyd, LaPorte, Hamilton, Hancock, Hendricks, Johnson, Madison, Marion, Morgan, Shelby, and St. Joseph as attainment for the 8-hour ozone standard.
  - (4) 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. DeKalb 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.
- (b) DeKalb County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15<sup>th</sup>, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.
- (c) Other Criteria Pollutants  
DeKalb County has been classified as attainment or unclassifiable in Indiana for all other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

### Unrestricted Potential Emissions

Appendix A of this TSD reflects the unrestricted potential emissions of the source.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants is still less than 100 tons per year. The potential to emit PM10 pollutants are greater than 25 tons per year, therefore, the source is subject to the provisions of 326 IAC 2-6.1. The source is not subject to the provisions of 326 IAC 2-7. Therefore, the source will be issued an MSOP Renewal.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year.
- (c) Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-7, fugitive emissions are not counted toward the determination of Part 70 applicability.

### Potential to Emit After Issuance

The table below summarizes the potential to emit, reflecting all limits of the emission units. Any control equipment is considered enforceable only after issuance of this MSOP and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit (tons/year)							
	PM	PM <sub>10</sub>	PM <sub>2.5</sub>	SO <sub>2</sub>	VOC	CO	NO <sub>x</sub>	HAPs
3 Brass Induction Furnaces	21.9	21.9	21.0	0.00	0.00	0.00	0.00	
5 Aluminum Crucible Furnaces	1.56	1.40	1.40	0.04	0.36	5.52	6.57	0.118
Brass Castings	0.02	0.02	0.02	0.00	0.00	0.00	0.00	
Brass Pouring/Casting	4.60	4.60	4.60	0.02	0.15	0.86	0.01	
Brass Sand Handling	6.57	6.57	6.57	0.00	0.00	0.00	0.00	
Brass Shakeout	3.50	2.45	2.45	0.00	0.00	0.00	0.00	
Aluminum Castings	0.00	0.00	0.00	0.16	0.11	0.00	0.01	
Aluminum Pouring/Cooling	3.45	3.45	3.45	0.00	0.00	0.00	0.00	
Aluminum Fluxing	0.44	0.23	0.23	0.00	0.00	0.00	0.00	
Aluminum Sand Handling	4.93	4.93	4.93	0.00	0.00	0.00	0.00	
Aluminum Manual Shakeout	0.26	0.18	0.18	0.00	0.00	0.00	0.00	
1 Tumble Cleaning Unit	2.23	0.22	0.22	0.00	0.00	0.00	0.00	
2 Tumble Cleaning Units	2.23	0.22	0.22	0.00	0.00	0.00	0.00	
2 Brass Abrasive Grinders	0.01	0.01	0.01	0.00	0.00	0.00	0.00	
2 aluminum abrasive grinders	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
1 reclaimer (metal reclaimer from waste sand)	30.30	30.30	30.30	0.00	0.00	0.00	0.00	
Space Heaters, Age Oven, Heat Treat	0.17	0.17	0.17	0.02	0.12	1.84	2.19	0.0394
<b>Total Emissions</b>	<b>82.18</b>	<b>76.66</b>	<b>76.65</b>	<b>0.10</b>	<b>0.74</b>	<b>7.36</b>	<b>8.78</b>	<b>&lt;10/25</b>
<b>TV Major</b>	<b>--</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>&lt;10/25</b>
<b>PSD Major</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>--</b>

- (a) This existing stationary source is not major for PSD because the emissions of each criteria pollutant are less than two hundred fifty (<250) tons per year, and it is not one of the twenty-eight (28) listed source categories.
- (b) Fugitive Emissions  
EPA's Uncategorized Policy and Guidance Document, "Treatment of Aluminum Die Casting Operations for the Purposes of New Source Review Applicability", December 4, 1998, specifically addresses the definition of an aluminum die casting facility in relation to secondary aluminum production, based on the purity of aluminum used. EPA has determined that a die casting facility is not engaged in secondary aluminum production as a primary activity as long as two conditions are met: (1) the facility uses feedstock such as ingots, billets, bars, sows or shot (or even as molten metal) that is of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required (e.g., "clean charge" as defined in 40 CFR 63.1503); and (2) the facility does not produce intermediate forms of feedstock (ingots, billets, bars, shot, sows, etc.) for sale or for use

by other facilities. Hence, a source that uses "clean charge" is not engaged in secondary aluminum production and would not be classified as a "nested secondary aluminum support facility. Therefore, this source will not be considered as one of twenty-eight (28) source categories as long as clean charge is used.

Based on an U.S. EPA memo of December 4, 1998, aluminum die casting facilities typically need not be considered as a secondary metal production plant because they do not use the feedstock, do not engage in the elaborate processes, and do not produce the end products that are characteristic of facilities engaged in secondary aluminum recovery.

Ball Brass and Aluminum Foundry consists of an aluminum and brass foundry facilities processing clean aluminum and brass charge along with aluminum and brass scrap generated within the source. The source does not use secondary scrap brought from other sources. Therefore, it is not considered a secondary metal production source. As a result, this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) of all criteria pollutants is still less than 100 tons per year. PM, PM10 and PM2.5 is each greater than 25 tons per year. The source is not subject to the provisions of 326 IAC 2-7. Therefore, the source will be issued an MSOP Renewal.

#### **Federal Rule Applicability**

- (a) The requirements of 40 CFR Part 64, Compliance Assurance Monitoring, are not included in this permit. This source is operating as a MSOP. Therefore, the requirements of 40 CFR 64, Compliance Assurance Monitoring, are not applicable to this source.

#### **NSPS/NESHAPs**

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in this permit renewal.
- (c) This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63.1500, Subpart RRR (National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production) because it is not a major source of HAPs as defined in 40 CFR 63, Subpart A. Also, the source does not produce secondary aluminum, melts only clean charge, internal scrap, or customer returns and does not operate a sweat furnace, thermal chip dryer or scrap dryer/delacquering kiln/decoating kiln.
- (d) This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63.7680, Subpart EEEEE (National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries) because it is not a major source of HAPs as defined in 40 CFR 63, Subpart A. It is not an iron and steel foundry. Also, the source does not produce secondary aluminum.
- (e) This source is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 63.10880, Subpart ZZZZZ (National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources) because it is not a major source of HAPs as defined in 40 CFR 63, Subpart A. It is not subject because it

is not an iron and steel foundry that is an area source of HAP emissions. Also, the source does not produce secondary aluminum.

### **State Rule Applicability - Entire Source**

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

Ball Brass and Aluminum Foundry was constructed prior to August 7, 1977. This source consists of an aluminum and brass foundry processing clean aluminum and brass charge; and aluminum and brass scrap generated within the source. It does not use secondary scrap brought from other sources. Therefore, it is not in one (1) of the twenty-eight (28) categories. At the time the source was constructed, it was a minor source under PSD because the potential to emit of each criteria pollutant before controls was less than the PSD major source threshold of 250 tons per year. The source's potential to emit of all criteria pollutants remains below 250 tons per year. Therefore, it is an existing minor source under PSD and not subject to 326 IAC 2-2 (PSD).

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

The operation of the brass and aluminum foundry plant will emit less than 10 tons per year of a single HAP and less than 25 tons per year of any combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

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

This source is located in DeKalb County and the potential to emit of each criteria pollutant is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

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

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

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

#### **326 IAC 9 (Carbon Monoxide Emission Limits)**

Pursuant to 326 IAC 9-1-2(a)(2), this source is not subject to this rule because each of the induction furnaces has a maximum throughput of 0.083 tons per hour which is less than ten (10) tons per hour. Therefore, 326 IAC 2-9-1-1 does not apply.

### **State Rule Applicability - Melting Furnaces and Foundry Facilities**

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

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the brass and aluminum foundry shall not exceed the particulate emission limits in pounds per hour as shown in the table below:

Emission Units	Process Weight		Particulate Emission Limit (lbs/hour)
	(lbs/hour)	(tons/hour)	
Each of the 5 Aluminum Melting Furnaces	75	0.038	0.45
Each of the 3 Brass Furnaces	167	0.083	0.78
Brass Castings	500	0.25	1.62
Brass Pouring/Castings	500	0.25	1.62
Brass Sand Handling	500	0.25	1.62
Brass Shakeout	500	0.25	1.62
Aluminum Castings	375	0.188	1.34
Aluminum Pouring/Cooling	375	0.188	1.34
Aluminum Sand Handling	375	0.188	1.34
Aluminum Manual Shakeout	375	0.188	1.34

The pounds per hour limitations were 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 the use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where:}$$

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

One (1) wheelabrator dust collector, identified as DC-3, shall be in operation at all times when the four (4) brass electric induction furnaces are in operation to comply with these limits.

Based on the potential to emit calculations, the particulate emissions from the brass foundry (consisting of castings, pouring/castings, sand handling, and shakeout), aluminum foundry (consisting of castings, pouring/castings, sand handling, and shakeout) are less than the particulate emission limit calculated above (see Appendix A). Therefore, the source will be in compliance with this rule.

- (b) Pursuant to 326 IAC 6-3-2(e)(2), the particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) and 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. Therefore, the five (5) aluminum furnaces shall each not exceed 0.551 pounds per hour.

Based on the calculations provided in Appendix A, these emission units will be in compliance with this rule.

**State Rule Applicability - Abrasive Grinders, Tumble Cleaning Units, Metal Reclaimer, Cutoff Saws**

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

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the six (6) abrasive grinders, three (3) tumble cleaning units, one (1) metal reclaimer, and two (2) brass cutoff saws shall not exceed the particulate emission limits in pounds per hour as shown in the table below:

Emission Units	Process Weight		Particulate Emission Limit (lbs/hour)
	(lbs/hour)	(tons/hour)	
Each of the 2 Aluminum Abrasive Grinders	187.5	0.094	0.84
Each of the 4 Brass Abrasive Grinders	125	0.063	0.64
1 Tumble Cleaning Unit	600	0.30	1.83
Each of the 2 Brass Cut-off Saws	187.5	0.094	0.84
1 Metal Reclaimer	1000	0.50	2.58
Each of the 2 Tumble Cleaning Units	300	0.15	1.15

The pounds per hour limitations were 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 the 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

One (1) baghouse shall be in operation at all times when the one (1) metal reclaimer is in operation to comply with this limit.

Based on the potential to emit calculations, the particulate emissions from the six (6) abrasive grinders, three (3) tumble cleaning units, and two (2) brass cut off saws are less than the particulate emission limit calculated above (see Appendix A). Therefore, the source will be in compliance with this rule.

#### State Rule Applicability - Degreaser

326 IAC 8-3-5 (Cold Cleaner Degreaser Operation and Control)

The source was subject to the requirements of 326 IAC 8-3-5 (Cold Cleaner Degreaser Operation) but is no longer subject because the degreasing unit was removed from the source.

#### State Rule Applicability - Space Heaters, Core Bake Oven, Heat Treat Bath

There are no specifically applicable regulations that apply to these emission units.

#### Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-6 are required to ensure 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 2-6. 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.

Testing requirements

(a) There continues to be no specific testing requirements associated with any of the emission units located at this source.

Control	Parameter	Frequency	Range	Excursions and Exceedances
Wheelabrator Dust Collectors DC-1, DC-2, DC-3	Visible Emissions	Daily	Normal - <u>Abnormal</u> Failure Detection	Response Steps
Torit Dust Collectors	Visible Emissions	Daily	Normal - <u>Abnormal</u> Failure Detection	Response Steps
Baghouse DC-4	Water Pressure Drop	Daily	0.5 to 3.0 inches	Response Steps
Cyclones C-1 and C-2	Visible Emissions	Daily	Normal - <u>Abnormal</u> Failure Detection	Response Steps

There continues to be no specific compliance monitoring requirements for the activities, and each of the Natural Gas-Fired Combustion Sources.

**Recommendation**

The staff recommends to the Commissioner that the MSOP Renewal be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 5, 2008. Additional information was received on February 11 and 23, 2009.

**Conclusion**

The operation of this brass and aluminum foundry shall be subject to the conditions of the attached MSOP Renewal No. 033-27226-00037.

<b>IDEM Contact</b>
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- (a) Questions regarding this proposed permit can be directed to Janet Mobley at the 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) 234-5373 or toll free at 1-800-451-6027 extension 4-5373.
- (b) A copy of the findings is available on the Internet at: <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's Guide for Citizen Participation and Permit Guide on the Internet at: [www.idem.in.gov](http://www.idem.in.gov).

**Appendix A: Emission Calculations  
Summary**

**Company Name: Ball Brass and Aluminum Foundry**  
**Address: 520 Hazel Street, Auburn, Indiana 46706**  
**MSOP Renewal: M033-27226-00037**  
**Reviewer: Janet Mobley**  
**Date: December 11, 2008**

**POTENTIAL TO EMIT BEFORE CONTROLS**

<b>Emission Units</b>	<b>PM</b>	<b>PM10</b>	<b>PM2.5</b>	<b>SO<sub>2</sub></b>	<b>VOC</b>	<b>CO</b>	<b>Nox</b>	<b>HAPs</b>
3 electric Induction brass melting Furnaces (units 1, 2 and 3)	21.9	21.9	21.90	0.00	0.00	0.00	0.00	
5 gas fired Aluminum Crucible Furnaces	1.56	1.40	1.40	0.04	0.36	5.52	6.57	0.118 Hexane
Brass Foundry Facility consisting of								
Brass Castings	0.02	0.02	0.02	0.00	0.00	0.00	0.00	
Brass Pouring/Cooling	4.60	4.60	4.60	0.02	0.15	0.00	0.01	
Brass Sand Handling	6.57	6.57	6.57	0.00	0.00	0.00	0.00	
Brass Shakeout	3.50	2.45	2.45	0.00	0.00	0.00	0.00	
Aluminum Foundry Facility consisting of								
Aluminum Castings	0.00	0.00	0.000	0.016	0.11	0.00	0.01	
Aluminum Pouring/Cooling	3.45	3.45	3.45	0.00	0.00	0.00	0.00	
Aluminum Fluxing	0.44	0.23	0.23	0.00	0.00	0.00	0.00	
Aluminum Sand Handling	4.93	4.93	4.93	0.00	0.00	0.00	0.00	
Aluminum Manual Shakeout	0.26	0.18	0.18	0.00	0.00	0.00	0.00	
1 Tumble Cleaning Unit	2.23	0.22	0.22	0.00	0.00	0.00	0.00	
2 Tumble Cleaning Units	2.23	0.22	0.22	0.00	0.00	0.00	0.00	
4 brass abrasive grinders	0.01	0.01	0.01	0.00	0.00	0.00	0.00	
2 aluminum abrasive Grinders	0.01	0.00	0.00	0.00	0.00	0.00	0.00	
1 reclaimer (metal reclaimer from waste sand)	30.30	30.30	30.30	0.00	0.00	0.00	0.00	
2 brass cut off saws	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Natural gas Space Heaters, final core bake Ovens, Heat Treat bath	0.17	0.17	0.17	0.02	0.12	1.84	2.19	0.0394 Hexane
Paved Roads								
Unpaved Roads								
<b>TOTAL</b>	<b>82.18</b>	<b>76.66</b>	<b>76.65</b>	<b>0.10</b>	<b>0.74</b>	<b>7.36</b>	<b>8.78</b>	<b>&lt;10/25</b>

**Appendix A: Emission Calculations**  
**Three (3) Electric Induction Furnaces (Units 1, 2 and 3) and Five (5) Aluminum Furnaces**

**Company Name: Ball Brass and Aluminum Foundry**  
**Address: 520 Hazel Street, Auburn, Indiana 46706**  
**MSOP Renewal: M033-27226-00037**  
**Reviewer: Janet Mobley**  
**Date: December 11, 2008**

Emission Unit	Maximum Throughput Rate		* Emission Factor (lbs/ton)		PTE of PM before control (tons/year)	PTE of PM10 before control (tons/year)
	(lbs/hour)	(tons/hour)	PM	PM10		
5 Aluminum Crucible Furnaces	375	0.188	1.9	1.7	1.56	1.40
3 Brass Electric Induction Furnaces **	500	0.25	20	20	21.9	21.9
<b>TOTAL (tons/year) =</b>					<b>23.5</b>	<b>23.3</b>

\* PM/PM10 emission factor for Aluminum Crucible Furnaces from FIRE Vol II, Secondary Metal Production: Smelting Furnace/Crucible (SCC 3-04-001-02).

\* PM/PM10 emission factor for Brass Electric Induction Furnaces are from FIRE Vol II, Secondary Metal Production: Bronze Electric Induction (SCC 3-04-002-24).

Control = Three (3) Brass Electric Induction Furnaces are controlled by wheelabrator dust collector (identified as DC-3) with 99 % control efficiency.

\*\* The brass furnaces in combination cannot operate more than 500 lbs/hour due to the limitation on the molder squeezer capacities.

**METHODOLOGY**

Maximum throughput (tons/hour) = Maximum throughput (lbs/hour) \* 1ton/2000 lbs

PTE before control (tons/year) = Maximum throughput (tons/hour) \* Emission factor (lb/ton) \* 1ton/2000 lbs \* 8760 hours/year

PTE after control (tons/year) = Maximum throughput (tons/hour) \* Emission factor (lb/ton) \* 1ton/2000 lbs \* 8760 hours/year\* (1- Control efficiency %)

**Appendix A: Emission Calculations**  
**Natural Gas Combustion Only**  
**Five (5) Aluminum Crucible Furnaces**  
**Company Name: Ball Brass and Aluminum Foundry**  
**Address: 520 Hazel Street, Auburn, Indiana 46706**  
**MSOP Renewal: M033-27226-00037**  
**Reviewer: Janet Mobley**  
**Date: December 11, 2008**

Heat Input Capacity  
MMBtu/hour

Potential Throughput  
MMCF/year

15.0 (5 Units Total)

131.4

Pollutant						
	* PM	* PM10	SO <sub>2</sub>	** NO <sub>x</sub>	VOC	CO
Emission Factor (lb/MMCF)	1.9	7.6	0.6	100	5.5	84.0
Potential To Emit (tons/year)	NA	NA	0.04	6.57	0.36	5.52

\*PM and PM10 emissions are included in the emission calculation for melting process.

\*\*Emission factors for NO<sub>x</sub>: Uncontrolled = 100 lb/MMCF

Emission factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All Emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

**METHODOLOGY**

Potential throughput (MMCF/year) = Heat input capacity (MMBtu/hour) \* 8760 hours/year \* 1 MMCF/1000 MMBtu

PTE (tons/year) = Potential throughput (MMCF/year) \* Emission factor (lb/MMCF) \* 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations  
Natural Gas Combustion Only  
Five (5) Aluminum Crucible Furnaces**

**Company Name:** Ball Brass and Aluminum Foundry  
**Address:** 520 Hazel Street, Auburn, Indiana 46706  
**MSOP Renewal:** M033-27226-00037  
**Reviewer:** Janet Mobley  
**Date:** December 11, 2008

**HAPs - Organics**

Emission Factor (lb/MMCF)	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential To Emit (tons/year)	1.38E-04	7.88E-05	4.93E-03	1.18E-01	2.23E-04

**HAPs - Metals**

Emission Factor (lb/MMCF)	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential To Emit (tons/year)	3.29E-05	7.23E-05	9.20E-05	2.50E-05	1.38E-04

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations  
Brass Foundry Facilities**

**Company Name: Ball Brass and Aluminum Foundry**  
**Address: 520 Hazel Street, Auburn, Indiana 46706**  
**MSOP Renewal: M033-27226-00037**  
**Reviewer: Janet Mobley**  
**Date: December 11, 2008**

**POTENTIAL TO EMIT BEFORE CONTROLS IN TONS PER YEAR**

Emission Units	Maximum Throughput		*PM Emission Factor	PM	*PM10 Emission Factor	PM10	*VOC Emission Factor	VOC	*SO <sub>2</sub> Emission Factor	SO <sub>2</sub>	*NO <sub>x</sub> Emission Factor	NO <sub>x</sub>	*CO Emission Factor	C O
	(lbs/hour)	(tons/hour)	(lbs/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)
Brass Castings	500	0.25	0.015	0.02	0.015	0.02								
Brass Pouring/Cooling	500	0.25	4.20	4.60	4.20	4.60	0.14	0.15	0.02	0.02	0.01	0.01		0.00
Brass Sand Handling	500	0.25	6.0	6.57	6.0	6.57								
Brass Shakeout	500	0.25	3.20	3.50	2.24	2.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>TOTAL</b>				<b>14.7</b>		<b>13.6</b>		<b>0.15</b>		<b>0.02</b>		<b>0.01</b>		<b>0.00</b>

**\* Note:**

Emission factor for brass castings is from FIRE Vol II, Secondary Metal Production - Copper: Casting Operations (SCC 3-04-002-39).  
 Emission factor for pouring/casting is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Pouring/Castings (SCC 3-04-003-20).  
 Emission factor for sand handling is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Sand Grinding/Handling (SCC 3-04-003-52).  
 Emission factor for brass shakeout is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Casting Shakeout (SCC 3-04-003-31).

Control = Brass shakeout is controlled by one (1) wheelabrator dust collector (identified as DC-2)

**METHODOLOGY**

Maximum throughput (tons/hour) = Maximum throughput (lbs/hour) \* 1ton/2000 lbs  
 PTE before control (tons/year) = Maximum throughput (tons/hour) \* Emission factor (lb/ton) \* 1ton/2000 lbs \* 8760 hours/year  
 PM10 is assumed to become PM2.5

EPA's Uncategorized Policy and Guidance Document, "Treatment of Aluminum Die Casting Operations for the Purposes of New Source Review Applicability", December 4, 1998, Specifically addresses the definition of an aluminum die casting facility in relation to secondary aluminum production, based on the purity of aluminum used. EPA has determined that a die casting facility is not engaged in secondary aluminum production as a primary activity as long as two conditions are met: (1) the facility uses feedstock such as ingots, billets, bars, sows or shot (or even as molten metal) that is of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required (e.g., "clean charge" as defined in 40 CFR 63.1503); and (2) the facility does not produce intermediate forms of feedstock or feedstock (ingots, billets, bars, shot, sows, etc.) for sale or for use by other facilities. Hence a source that uses "clean charge" is not engaged in secondary aluminum production and would not be classified as one of the twenty-eight (28) source categories as long as clean charge is used.

**Appendix A: Emission Calculations  
Aluminum Foundry Facilities**

**Company Name: Ball Brass and Aluminum Foundry  
Address: 520 Hazel Street, Auburn, Indiana 46706  
MSOP Renewal: M033-27226-00037  
Reviewer: Janet Mobley  
Date: December 11, 2008**

**POTENTIAL TO EMIT BEFORE CONTROLS IN TONS PER YEAR**

Emission Units	Maximum Throughput		* PM Emission Factor	PTE of PM	* PM10 Emission Factor	PTE of PM10	*VOC Emission Factor	PTE of VOC	*SO <sub>2</sub> Emission Factor	PTE of SO <sub>2</sub>	*NOx Emission Factor	PTE of NOx	*CO Emission Factor
	(lbs/hour)	(tons/hour)	(lbs/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)	(tons/year)	(lb/ton)
Aluminum Castings	375	0.188		negligible		negligible	0.14	0.11	0.02	0.016	0.01	0.008	0
Aluminum Pouring/Cooling	375	0.188	4.20	3.45	4.20	3.45							
Alumium Fluxing	0.20	0.0001	1000	0.44	532	0.23							
Aluminum Sand Handling	375	0.188	6.0	4.93	6.0	4.93							
Aluminum Manual Shakeout	375	0.188	0.32	0.26	0.22	0.18							
<b>TOTAL</b>				<b>9.08</b>		<b>8.79</b>		<b>0.11</b>		<b>0.016</b>		<b>0.008</b>	

**\* Note:**

There are no PM/PM10 emission factor for aluminum castings. Emission factor for SO<sub>2</sub>, VOC and NOx are from FIRE Vol II, Secondary Metal Production- Aluminum Castings (SCC 3-04-001-14). Emission factor for aluminum pouring/cooling is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries (SCC 3-04-003-18). Emission Factor for aluminum fluxing is from FIRE Vol II, Secondary Metal Production - Aluminum: Fluxing/Chlorination (SCC 3-04-001-04). Emission Factor for aluminum sand handling is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Sand Grinding/Handling (SCC 3-04-003-52). The AP-42 emission factor for shakeout is based on a shaker machine. Because castings are manually knocked out of molds. emissions at this facility are assumed to be approximately 90% less based on engineering estimates.

**METHODOLOGY**

PM10 = PM2.5

Maximum throughput (tons/hour) = Maximum throughput (lbs/hour) \* 1 ton/2000 lbs  
PTE before control (tons/year) = Maximum throughput (tons/hour) \* Emission factor (lb/ton) \* 1ton/2000 lbs \* 8760 hours/year

EPA's Uncategorized Policy and Guidance Document, "Treatment of Aluminum Die Casting Operations for the Purposes of New Source Review Applicability", December 4, 1998, Specifically addresses the definition of an aluminum die casting facility in relation to secondary aluminum production, based on the purity of aluminum used. EPA has determined that a die casting facility is not engaged in secondary aluminum production as a primary activity as long as two conditions are met: (1) the facility uses feedstock such as ingots, billets, bars, sows or shot (or even as molten metal) that is of a specified alloy and purity or scrap from other industrial facilities for which the quality is specified and guaranteed by contract and for which little fluxing or alloying is required (e.g., "clean charge" as defined in 40 CFR 63.1503); and (2) the facility does not produce intermediate forms of feedstock or feedstock (ingots, billets, bars, shot, sows, etc.) for sale or for use by other facilities. Hence a source that uses "clean charge" is not engaged in secondary aluminum production and would not be classified as one of the twenty-eight (28) source categories as long as clean charge is used.

**Appendix A: Emissions Calculations  
PM/PM10 Emissions  
From Three (3) Tumble Cleaning Units**

**Company Name: Ball Brass and Aluminum Foundry  
Address: 520 Hazel Street, Auburn, Indiana 46706  
MSOP Renewal: M033-27226-00037  
Reviewer: Janet Mobley  
Date: December 11, 2008**

Emission Units	Max Throughput Rate		* Emission Factor		Potential To Emit Before Control		Control Efficiency %	Potential To Emit After Control	
	(lbs/hour)	(tons/hour)	PM (lbs/ton)	PM10 (lbs/ton)	PM (tons/year)	PM10 (tons/year)		PM (tons/year)	PM10 (tons/year)
1 Tumble Cleaning Unit	600	0.30	1.7	0.17	2.23	0.22	98%	0.04	0.004
2 Tumble Cleaning Units	600	0.30	1.7	0.17	2.23	0.22	98%	0.04	0.004
<b>TOTAL</b>					<b>4.47</b>	<b>0.45</b>		<b>0.09</b>	<b>0.01</b>

\*PM/PM10 emission factor is from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Shot Blasting (SCC 3-04-003-40). The emission factor for tumble cleaning is assumed to be 90 % less because the source does not process ferrous castings. Therefore, emissions at this facility are relatively low based on engineering estimates.

Control = One (1) wheelabrator dust collector (identified as DC-1)

**METHODOLOGY**

PTE PM/PM10 before control (tons/year) = Max.Throughput Rate (tons/hour) \* Emission Factor (lbs/ton) \* 8760 hours/year \* 1 ton/2000 lbs

PTE PM/PM10 after control (tons/year) = Max.Throughput Rate (tons/hour) \* Emission Factor (lbs/ton) \* 8760 hours/year \* 1 ton/2000 lbs \* (1-Control Efficiency %)

**Appendix A: Emissions Calculations  
PM/PM10 Emissions  
From Abrasive Grinders**

**Company Name: Ball Brass and Aluminum Foundry  
Address: 520 Hazel Street, Auburn, Indiana 46706  
MSOP Renewal: M033-27226-00037  
Reviewer: Janet Mobley  
Date: December 11, 2008**

Emission Units	Max Throughput Rate		* Emission Factor		Potential To Emit	
	(lbs/hour)	(tons/hour)	PM (lbs/ton)	PM10 (lbs/ton)	PM (tons/year)	PM10 (tons/year)
2 Aluminum Abrasive Grinders	375	0.188	0.01	0.0045	0.01	3.70E-03
4 Brass Abrasive Grinders	500	0.25	0.01	0.0045	0.01	4.93E-03
<b>TOTAL</b>					<b>0.02</b>	<b>0.01</b>

\* Emission factors are from FIRE Vol II, Secondary Metal Production - Grey Iron Foundries: Castings Finishing (SCC 3-04-003-60).

Control = Brass abrasive grinders are controlled by one (1) torit dust collector exhausting at EV-4.  
Aluminum abrasive grinders are controlled by one (1) torit dust collector exhausting at EV-13.

**METHODOLOGY**

PTE PM/PM10 (tons/year) = Max. Throughput Rate (tons/hour) \* Emission Factor (lbs/ton) \* 8760 hours/year \* 1 ton/2000 lbs

**Appendix A: Emission Calculations  
PM/PM10 Emissions  
From One (1) Metal Reclaimer**

**Company Name: Ball Brass and Aluminum Foundry  
Address: 520 Hazel Street, Auburn, Indiana 46706  
MSOP Renewal: M033-27226-00037  
Reviewer: Janet Mobley  
Date: December 11, 2008**

		<b>PTE After Control</b>	<b>PTE Before Control</b>
		ton/year	ton/year
*PM Control Equipment = Baghouse			
Outlet Grain Loading in grains/acf	0.014	1.51	30.3
Air Flow Rate in acf/min	2880		
Control Efficiency in %	95%		

\* Assume all PM emissions are equal to PM10 emissions.

**METHODOLOGY**

PTE PM/PM10 after control (ton/year) = Outlet grain loading (gr/acf) \* Air flow rate (acf/min) \* 60 min/hour \* 1 lb/7000grains \* 8760 hours/year \* 1ton /2000 lbs

PTE PM/PM10 before control (ton/year) = Outlet grain loading (gr/acf) \* Air flow rate (acf/min) \* 60 min/hour \* 1 lb/7000grains \* 8760 hours/year \* 1ton /2000 lbs \*1/(1-Control efficiency %)

**Appendix A: Emission Calculations  
Natural Gas Combustion Only  
MMBTU/HR<100  
Space Heaters, Age Oven, and Heat Treat**

**Company Name:** Ball Brass and Aluminum Foundry  
**Address:** 520 Hazel Street, Auburn, Indiana 46706  
**MSOP Renewal:** M033-27226-00037  
**Reviewer:** Janet Mobley  
**Date:** December 11, 2008

Heat Input Capacity  
MMBtu/hour

Potential Throughput  
MMCF/year

5.00 (14 units total)

43.8

	Pollutant					
	* PM	* PM10	SO <sub>2</sub>	** NO <sub>x</sub>	VOC	CO
Emission Factor (lb/MMCF)	1.9	1.9	0.6	100	5.5	84.0
Potential To Emit (tons/year)	0.04	0.04	0.01	2.19	0.12	1.84

\*PM and PM10 emission factors are filterable and condensable PM and PM10 combined.

\*\*Emission factors for NO<sub>x</sub>: Uncontrolled = 100 lb/MMCF

Emission factors from AP-42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (July, 1998).

All Emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

**METHODOLOGY**

Potential throughput (MMCF/year) = Heat input capacity (MMBtu/hr) \* 8760 hours/year \* 1 MMCF/1000 MMBtu

PTE (tons/year) = Potential throughput (MMCF/year) \* Emission factor (lb/MMCF) \* 1 ton/2000 lbs

See next page for HAPs emissions calculations.

**Appendix A: Emission Calculations  
Natural Gas Combustion Only  
MMBTU/HR<100  
Space Heaters, Age Oven, and Heat Treat**

**Company Name: Ball Brass and Aluminum Foundry  
Address: 520 Hazel Street, Auburn, Indiana 46706  
MSOP Renewal: M033-27226-00037  
Reviewer: Janet Mobley  
Date: December 11, 2008**

**HAPs - Organics**

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03
Potential To Emit (tons/year)	4.60E-05	2.63E-05	1.64E-03	3.94E-02	7.45E-05

**HAPs - Metals**

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor (lb/MMCF)	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Potential To Emit (tons/year)	1.095E-05	2.409E-05	3.066E-05	8.322E-06	4.599E-05

Methodology is the same as previous page.

The five highest organic and metal HAPs emission factors provided above are from AP-42, Chapter 1.4, Table 1-4.2, 1.4-3 and 1.4-4 (July, 1998). Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations  
Process Weight Rule**

**Company Name: Ball Brass and Aluminum Foundry  
Address: 520 Hazel Street, Auburn, Indiana 46706  
MSOP Renewal: M033-27226-00037  
Reviewer: Janet Mobley  
Date: December 11, 2008**

**PROCESS WEIGHT RULE 326 IAC 6-3-2**

Emission Units	Max. Throughput Capacity (P)		Emission Rate (E) (lb/hour)	Source's Estimated PTE (lb/hour)
	(lb/hour)	(ton/hour)		
Each of 5 Al Melting Furnaces	75	0.038	0.45	0.07
Each of 3 Brass Melting Furnaces	167	0.083	0.78	1.67
Brass Castings	500	0.25	1.62	0.004
Brass Pouring/Casting	500	0.25	1.62	1.05
Brass Sand Handling	500	0.25	1.62	1.50
Brass Shakeout	500	0.25	1.62	0.80
Aluminum Castings	375	0.188	1.34	negligible
Aluminum Pouring/Cooling	375	0.188	1.34	0.79
Aluminum Sand Handling	375	0.188	1.34	1.13
Aluminum Manual Shakeout	375	0.188	1.34	0.06
1 Tumble Cleaning unit	600	0.30	1.83	0.17
Each of 2 Tumble Cleaning units	300	0.15	1.15	0.17
Each of 2 Al Abrasive Grinders	187.5	0.094	0.84	0.0009
Each of 4 Brass Abrasive Grinders	125	0.063	0.64	0.0006
Each of 2 Cut off Saws	187.5	0.094	0.84	negligible
1 Metal Reclaimer	1000	0.50	2.58	6.91

**METHODOLOGY**

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

where: E = Emission Rate in lbs per hour

P = Maximum Throughput Capacity in tons per hour

**Appendix A: Emission Calculations**  
**Fugitive Dust Emissions - Paved Roads**

**Company Name:** Ball Brass And Aluminum  
**Address City IN Zip:** 502 Hazel Street, Auburn, IN 4670  
**Permit Number:** 033-27226-00037  
**Reviewer:** Janet Mobley  
**Date:** February 23, 2009

**Paved Roads at Industrial Site**

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (12/2003).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	5.0	1.0	5.0	2.0	10.0	25	0.005	0.0	8.6
Vehicle (leaving plant) (one-way trip)	5.0	1.0	5.0	40.0	200.0	25	0.005	0.0	8.6
			0.0		0.0		0.000	0.0	0.0
			0.0		0.0		0.000	0.0	0.0
<b>Total</b>			<b>10.0</b>		<b>210.0</b>			<b>0.0</b>	<b>17.3</b>

Average Vehicle Weight Per Trip =  $\frac{21.0}{0.00}$  tons/trip  
Average Miles Per Trip =  $\frac{0.00}{0.00}$  miles/trip

Unmitigated Emission Factor,  $E_f = [k * (sL/2)^{0.65} * (W/3)^{1.5} - C]$  (Equation 1 from AP-42 13.2.1)

	PM	PM10	
where k =	0.082	0.016	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	21.0	21.0	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	g/m <sup>2</sup> = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E_f * [1 - (p/4N)]$

Mitigated Emission Factor,  $E_{ext} = E_f * [1 - (p/4N)]$   
where p =  $\frac{125}{365}$  days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)  
N =  $\frac{365}{365}$  days per year

	PM	PM10	
Unmitigated Emission Factor, $E_f$ =	0.69	0.14	lb/mile
Mitigated Emission Factor, $E_{ext}$ =	0.63	0.12	lb/mile
Dust Control Efficiency =	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.00	0.00	0.00	0.00	0.00	0.00
Vehicle (leaving plant) (one-way trip)	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	0.00	0.00	0.00	0.00
	<b>0.01</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Unmitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] \* [Mitigated Emission Factor (lb/mile)] \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] \* [1 - Dust Control Efficiency]

**Abbreviations**

PM = Particulate Matter  
PM10 = Particulate Matter (<10 um)  
PTE = Potential to Emit

**Appendix A: Emission Calculations**  
**Fugitive Dust Emissions - Unpaved Roads**

**Company Name:** Ball Brass And Aluminum  
**Address City IN Zip:** 502 Hazel Street, Auburn, IN 4670  
**Permit Number:** 033-27226-00037  
**Reviewer:** Janet Mobley  
**Date:** February 23, 2009

**Unpaved Roads at Industrial Site**

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	3.0	1.0	3.0	20.0	60.0	120	0.023	0.1	24.9
Vehicle (leaving plant) (one-way trip)	3.0	1.0	3.0	4.0	12.0	120	0.023	0.1	24.9
			0.0		0.0		0.000	0.0	0.0
			0.0		0.0		0.000	0.0	0.0
<b>Total</b>			<b>6.0</b>		<b>72.0</b>			<b>0.1</b>	<b>49.8</b>

Average Vehicle Weight Per Trip =  $\frac{12.0}{0.02}$  tons/trip  
Average Miles Per Trip =  $\frac{120}{0.02}$  miles/trip

Unmitigated Emission Factor,  $E_f = k \left[ \left( \frac{s}{12} \right)^a \right] \left[ \left( \frac{W}{3} \right)^b \right]$  (Equation 1a from AP-42 13.2.2)

	PM	PM10	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	12.0	12.0	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor,  $E_{ext} = E_f \left[ \frac{365 - P}{365} \right]$   
Mitigated Emission Factor,  $E_{ext} = E_f \left[ \frac{365 - P}{365} \right]$   
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	
Unmitigated Emission Factor, $E_f$ =	4.81	1.23	lb/mile
Mitigated Emission Factor, $E_{ext}$ =	3.17	0.81	lb/mile
Dust Control Efficiency =	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.06	0.02	0.04	0.01	0.02	0.01
Vehicle (leaving plant) (one-way trip)	0.06	0.02	0.04	0.01	0.02	0.01
	0.00	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00	0.00
	<b>0.12</b>	<b>0.03</b>	<b>0.08</b>	<b>0.02</b>	<b>0.04</b>	<b>0.01</b>

**Methodology**

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] \* [Maximum trips per day (trip/day)]  
Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]  
Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] \* [Maximum one-way distance (mi/trip)]  
Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]  
Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]  
Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Unmitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) \* (Mitigated Emission Factor (lb/mile)) \* (ton/2000 lbs)  
Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) \* (1 - Dust Control Efficiency)

**Abbreviations**

PM = Particulate Matter  
PM10 = Particulate Matter (<10 um)  
PTE = Potential to Emit