



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

April 8, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: Charles O. Hiler & Con, Inc. / 141-5026-00103

FROM: Paul Dubenetzky
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot 9/16/03



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MINOR SOURCE OPERATING PERMIT (MSOP) OFFICE OF AIR QUALITY

**Charles O. Hiler & Son, Inc.
Route 6 East
Walkerton, Indiana 46574**

(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.

Operation Permit No.: 141-5026-00103	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: April 8, 2004 Expiration Date: April 8, 2009

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SECTION A

SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.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)]

The Permittee owns and operates a brass, bronze, steel, and aluminum foundry.

Authorized Individual:	President
Source Address:	Route 6 East, Walkerton, Indiana 46574
Mailing Address:	P.O. Box 639, LaPorte, Indiana 46352
General Source Phone:	(219) 362-8531
SIC Code:	3366, 3365, and 3325
County Location:	Saint Joseph
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Minor Source, under PSD Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emissions Units and Pollution Control Equipment Summary

This stationary source is approved to operate the following emissions units and pollution control devices:

The source consists of the following unpermitted facilities/units:

- (a) One (1) charge handling process, identified as EU1, constructed in 1981, with a maximum capacity of 1.09 tons of metal per hour.
- (b) Three (3) electric induction furnaces, constructed in 1981, identified as FRN1 through FRN3, constructed in 1981, with a maximum total melting capacity of 0.8 tons of brass, bronze, or steel per hour, controlled by baghouse C6, and exhausting to stack S8.
- (c) Two (2) natural gas-fired crucible furnaces, for melting aluminum only, identified as FRN4 and FRN5, constructed in 1963 and 1964, with a melting capacity of 0.15 tons per hour and 0.14 tons per hour, respectively, each with a heating capacity of two (2.0) million British thermal units per hour, and exhausting to stack S1.
- (d) One (1) power and free pouring process, identified as EU4, with a maximum capacity of 0.8 tons of brass, bronze or steel and 1.28 tons of sand per hour, controlled by baghouse C6, and exhausting to stack S8.
- (e) One (1) vertical pouring process, identified as EU5, with a maximum capacity of 0.6 tons of aluminum or steel per hour and 0.96 tons of sand per hour, and exhausting to stack S16.
- (f) One (1) cooling process for the power and free line, identified as EU6, with a maximum capacity of 0.8 tons of metal and 1.28 tons of sand per hour, and exhausting to stacks S4, S6, and S25.
- (g) One (1) cooling process for the vertical line, identified as EU7, with a maximum capacity of 0.6 tons of metal and 0.96 tons of sand per hour, and exhausting to stack S16.

- (h) Two (2) manual shakeout processes, identified as EU8, with a combined total maximum capacity of 1.09 tons of metal and 1.74 tons of sand per hour, and exhausting inside the building.
- (i) One (1) purchased sand pneumatic transfer system, identified as EU9, with a maximum capacity of 3.50 tons of sand per hour, controlled by baghouse C10, and exhausting to stack S24.
- (j) One (1) spent sand screener, identified as EU10, with a maximum capacity of 1.28 tons of sand per hour, controlled by baghouse C11, and exhausting to stack S23.
- (k) Seven (7) core making machines, identified as COR01 through COR07, each with a maximum capacity of 0.1 tons of shell sand per hour, equipped with gas-fired heaters with a combined maximum heat input rate of 1.05 million British thermal units per hour, and exhausting inside the building.
- (l) Eight (8) mold making machines, identified as MOLD1 through MOLD8, each with a maximum capacity of 0.35 tons of shell sand per hour, equipped with gas-fired heaters with a combined maximum heat input rate of 4.5 million British thermal units per hour, and exhausting inside the building.
- (m) One (1) shotblaster, identified as WHE01, with a maximum capacity of 3.0 tons of castings per hour, controlled by baghouse C9 which has a maximum flow rate of 3,500 scfm, and exhausting inside the building.
- (n) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million British thermal units per hour, including:
 - (1) A ladle preheater with maximum heat capacity of 0.5 MMBtu/hr;
 - (2) Ten (10) space heaters with a combined maximum heat input rate of 5.46 MMBtu/hr.
- (o) Paved and unpaved roads and parking lots with public access with a maximum one-way trip distance of 0.06 miles.
- (p) Six (6) grinders, identified as GRND1 through GRND6, with a capacity of 0.1425 tons of castings per hour each, controlled by four (4) fabric filters (identified as C2, C3, C4, and C5), with an outlet grain loading of less than 0.03 grains per dscf and a gas flow rate less than or equal to 4000 actual cubic feet per minute, which exhaust inside the building.
- (q) Mold release agents with low volatility contents.
- (r) Three (3) saws, identified as SAW1 through SAW3, with a maximum capacity of 1.09 tons of castings per hour, controlled by fabric filter C8, with an outlet grain loading of less than 0.03 grains per dscf, which exhausts inside the building.

SECTION B GENERAL CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

B.1 Permit No Defense [IC 13]

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

B.2 Definitions

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

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

B.4 Permit Term and Renewal [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5]

This permit is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

B.5 Modification to Permit [326 IAC 2]

All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.6 Annual Notification [326 IAC 2-6.1-5(a)(5)]

- (a) Annual notification shall be submitted 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) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, IN 46206-6015

- (d) 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.7 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days after issuance of this permit, including the following information on each emissions unit:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

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

- (b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.
- (c) A copy of the PMP's 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 PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation, Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.8 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]

- (a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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

- (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)]

- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.9 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] [IC13-30-3-1]

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

- (a) Enter upon the Permittee's premises where a 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 this title or the conditions of this permit or any operating permit revisions;
- (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 processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (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.10 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]

Pursuant to [326 IAC 2-6.1-6(d)(3)] :

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

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

B.11 Annual Fee Payment [326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.
- (b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, I/M & Billing Section), to determine the appropriate permit fee.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

C.1 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.2 Opacity [326 IAC 5-1]

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

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

C.3 Fugitive Dust Emissions [326 IAC 6-4]

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

C.4 Stack Height [326 IAC 1-7]

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using good engineering practices (GEP) pursuant to 326 IAC 1-7-3.

C.5 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work

or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

- (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
- (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and Renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements

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

- (a) Compliance testing on new emissions units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the

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

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

no later than thirty-five (35) days prior to the intended test date.

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual date.
- (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 the 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.7 Compliance Requirements [326 IAC 2-1.1-11]

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

Compliance Monitoring Requirements

C.8 Compliance Monitoring [326 IAC 2-1.1-11]

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

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

C.10 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11]

- (a) Whenever a condition in this permit requires the measurement of total static pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.
- (b) The Permittee may request the IDEM, OAQ approve the use of a pressure gauge or other instrument that does not meet the above specifications provided the Permittee can demonstrate an alternative pressure gauge or other instrument specification will adequately ensure compliance with permit conditions requiring the measurement of pressure drop or other parameters.

C.11 Compliance Response Plan - Preparation and Implementation

- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
 - (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
 - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan, the Permittee shall amend its Compliance Response Plan to include such response steps taken.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
 - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
 - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
 - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be ten (10) days or more until the unit or device will be shut down, then the permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down. The notification shall also include the status of the applicable compliance monitoring parameter with respect to normal, and the results of the response actions taken up to the time of notification.
 - (4) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
 - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.
 - (3) An automatic measurement was taken when the process was not operating.
 - (4) The process has already returned or is returning to operating within "normal" parameters and no response steps are required.
- (d) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is

operating, except for time necessary to perform quality assurance and maintenance activities.

C.12 Actions Related to Noncompliance Demonstrated by a Stack Test

- (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 emissions unit while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1.

Record Keeping and Reporting Requirements

C.13 Malfunctions Report [326 IAC 1-6-2]

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.14 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 when operation begins.

C.15 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 Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

- (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, any report required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-6.1-5 (a)(1)]:

- (a) One (1) charge handling process, identified as EU1, constructed in 1981, with a maximum capacity of 1.09 tons of metal per hour.
- (b) Three (3) electric induction furnaces, constructed in 1981, identified as FRN1 through FRN3, constructed in 1981, with a maximum total melting capacity of 0.8 tons of brass, bronze, or steel per hour, controlled by baghouse C6, and exhausting to stack S8.
- (c) Two (2) natural gas-fired crucible furnaces, for melting aluminum only, identified as FRN4 and FRN5, constructed in 1963 and 1964, with a melting capacity of 0.15 tons per hour and 0.14 tons per hour, respectively, each with a heating capacity of two (2.0) million British thermal units per hour, and exhausting to stack S1.
- (d) One (1) power and free pouring process, identified as EU4, with a maximum capacity of 0.8 tons of brass, bronze or steel and 1.28 tons of sand per hour, controlled by baghouse C6, and exhausting to stack S8.
- (e) One (1) vertical pouring process, identified as EU5, with a maximum capacity of 0.6 tons of aluminum or steel per hour and 0.96 tons of sand per hour, and exhausting to stack S16.
- (f) One (1) cooling process for the power and free line, identified as EU6, with a maximum capacity of 0.8 tons of metal and 1.28 tons of sand per hour, and exhausting to stacks S4, S6, and S25.
- (g) One (1) cooling process for the vertical line, identified as EU7, with a maximum capacity of 0.6 tons of metal and 0.96 tons of sand per hour, and exhausting to stack S16.
- (h) Two (2) manual shakeout processes, identified as EU8, with a combined total maximum capacity of 1.09 tons of metal and 1.74 tons of sand per hour, and exhausting inside the building.
- (i) One (1) purchased sand pneumatic transfer system, identified as EU9, with a maximum capacity of 3.50 tons of sand per hour, controlled by baghouse C10, and exhausting to stack S24.
- (j) One (1) spent sand screener, identified as EU10, with a maximum capacity of 1.28 tons of sand per hour, controlled by baghouse C11, and exhausting to stack S23.
- (k) Seven (7) core making machines, identified as COR01 through COR07, each with a maximum capacity of 0.1 tons of shell sand per hour, equipped with gas-fired heaters with a combined maximum heat input rate of 1.05 million British thermal units per hour, and exhausting inside the building.
- (l) Eight (8) mold making machines, identified as MOLD1 through MOLD8, each with a maximum capacity of 0.35 tons of shell sand per hour, equipped with gas-fired heaters with a combined maximum heat input rate of 4.5 million British thermal units per hour, and exhausting inside the building.

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

Facility Description [326 IAC 2-6.1-5 (a)(1)]: (Continued)

- (m) One (1) shotblaster, identified as WHE01, with a maximum capacity of 3.0 tons of castings per hour, controlled by baghouse C9 which has a maximum flow rate of 3,500 scfm, and exhausting inside the building.
- (n) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million British thermal units per hour, including:
 - (1) A ladle preheater with maximum heat capacity of 0.5 MMBtu/hr;
 - (2) Ten (10) space heaters with a combined maximum heat input rate of 5.46 MMBtu/hr.
- (o) Paved and unpaved roads and parking lots with public access with a maximum one-way trip distance of 0.06 miles.
- (p) Six (6) grinders, identified as GRND1 through GRND6, with a capacity of 0.1425 tons of castings per hour each, controlled by four (4) fabric filters (identified as C2, C3, C4, and C5), with an outlet grain loading of less than 0.03 grains per dscf and a gas flow rate less than or equal to 4000 actual cubic feet per minute, which exhaust inside the building.
- (q) Mold release agents with low volatility contents.
- (r) Three (3) saws, identified as SAW1 through SAW3, with a maximum capacity of 1.09 tons of castings per hour, controlled by fabric filter C8, with an outlet grain loading of less than 0.03 grains per dscf, which exhausts inside the building.

(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.1.1 Particulate Matter (PM) [326 IAC 6-1-2(a)]

Pursuant to 326 IAC 6-1-2(a) (Nonattainment Area Particulate Limitations), particulate matter (PM) emissions from processes at this source shall not discharge to the atmosphere gases which contain particulate matter in excess of 0.03 grains per dry standard cubic foot (dscf). The emissions of particulate matter (PM) from the following emissions units shall not exceed the limits as stated in the table below:

Emissions Unit	Emission Unit ID #	PM Emissions Limit (lb/hr)
Three (3) Electric Induction Furnaces	FRN 1, 2 & 3	2.57
Two (2) Gas-fired Crucible Furnaces	FRN 4 & 5	3.09
Power and Free Pouring Line	EU4	2.57
Vertical Pouring Line	EU5	5.14
Power and Free Cooling Line	EU6	2.57
Vertical Cooling Line	EU7	5.14
Pneumatic Sand Transfer	EU9	0.57
Spent Sand Screener	EU10	0.8
Shotblaster	WHE01	0.9
Six (6) Grinders	GRND1 - 6	0.62 (each)

Emissions Unit	Emission Unit ID #	PM Emissions Limit (lb/hr)
One (1) Cutoff Saw, Two (2) Band Saws	SAW1-3	0.31 (each)

D.1.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and their respective control devices.

Compliance Determination Requirements

D.1.3 Particulate Control [326 IAC 6-1-2(a)]

In order to comply with Condition D.1.1, the baghouses shall be in operation and control emissions at all times that the associated process is in operation.

Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)][326 IAC 2-6.1-5(a)(2)]

D.1.4 Visible Emissions Notations

- (a) Visible emission notations of the stack exhausts from the induction furnaces (FRN1, FRN2 and FRN3), the power and free pouring process (EU4), the pneumatic sand transfer system (EU9) and the spent sand screener (EU10) shall be performed once per shift during normal daylight operations. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a deviation from this permit.

D.1.5 Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouses (C6, C10, and C11) used in conjunction with the induction furnaces, the power and free pouring process, the pneumatic sand transfer system and the spent sand screener, at least once per shift when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 and 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a deviation from this permit.

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

D.1.6 Baghouse Inspections

An inspection shall be performed each calendar quarter of all bags controlling the induction furnaces (FRN1, FRN2 and FRN3), the power and free pouring process (EU4), the pneumatic sand transfer system (EU9) and the spent sand screener (EU10). Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.7 Broken or Failed Bag Detection

In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
- (b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced.

Record Keeping and Reporting Requirement

D.1.8 Record Keeping Requirements

- (a) To document compliance with Condition D.1.4, the Permittee shall maintain records of visible emission notations of the induction furnaces, the power and free pouring process, the pneumatic sand transfer system and the spent sand screenerstack exhausts once per shift.
- (b) To document compliance with Condition D.1.5, the Permittee shall maintain records once per shift of the total static pressure drop and cleaning cycle operation during normal operation when venting to the atmosphere.
- (c) To document compliance with Condition D.1.6, the Permittee shall maintain records of the results of the inspections required under Condition D.1.6.
- (d) To document compliance with Condition D.1.2, the Permittee shall maintain a log of all inspections required by the Preventative Maintenance Plan.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE 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).

Company Name:	Charles O. Hiler and Son, Inc.
Address:	Route 6 East
City:	Walkerton, Indiana 46574
Phone #:	219-362-8531
MSOP #:	141-5206-00103

I hereby certify that Charles O. Hiler & Sons, Inc. is

still in operation.

no longer in operation.

I hereby certify that Charles O. Hiler & Sons, Inc. is

in compliance with the requirements of MSOP 141-5026-00103.

not in compliance with the requirements of MSOP 141-5026-00103.

Authorized Individual (typed):
Title:
Signature:
Date:

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.

Noncompliance:

MALFUNCTION REPORT

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
FAX NUMBER - 317 233-5967**

**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 ?____, 100TONS/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:

Indiana Department of Environmental Management Office of Air Quality

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

Source Background and Description

Source Name:	Charles O. Hiler & Son, Inc.
Source Location:	Route 6 East, Walkerton, Indiana 46574
County:	St. Joseph
SIC Code:	3366, 3365, and 3325
Operation Permit No.:	141-5026-00103
Permit Reviewer:	ERG/ST

On February 26, 2004, the Office of Air Quality (OAQ) had a notice published in the South Bend Tribune, South Bend, Indiana, stating that Charles O. Hiler & Son, Inc. had applied for a Minor Source Operating Permit (MSOP) to operate a brass, bronze, steel, and aluminum foundry with control. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review, the OAQ has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted). The Table Of Contents has been modified, if applicable, to reflect these changes.

1. The Emission Statement language is being deleted because of revision to the 326 IAC 2-6 rule.

~~C.14 Emission Statement [326 IAC 2-6]~~

~~(a) The Permittee shall submit an emission statement certified pursuant to the requirements of 326 IAC 2-6. This statement must be received in accordance with the compliance schedule specified in 326 IAC 2-6-3 and must comply with the minimum requirements specified in 326 IAC 2-6-4.~~

~~The statement must be submitted to:~~

~~Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015~~

~~The emission statement does require the certifications by the "authorized individual" as defined by 326 IAC 2-1.1-1(1).~~

~~(b) The emission statement 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.~~

Indiana Department of Environmental Management Office of Air Quality

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

Source Background and Description

Source Name:	Charles O. Hiler & Son, Inc.
Source Location:	Route 6 East, Walkerton, Indiana 46574
County:	St. Joseph
SIC Code:	3366, 3365, and 3325
Operation Permit No.:	141-5026-00103
Permit Reviewer:	ERG/ST

The Office of Air Quality (OAQ) has reviewed an application from Charles O. Hiler & Son, Inc. relating to the operation of a brass, bronze, steel, and aluminum foundry.

Charles O. Hiler & Son, Inc. consists of a brass, bronze, steel, and aluminum foundry processing clean pre-alloyed ingots of brass, bronze, steel, and aluminum as charge along with brass, bronze, steel, and aluminum scrap generated within the source. The source does not use secondary scrap brought from other sources and does not alloy metals on-site. Therefore, it is not considered a secondary metal production source and is not in one (1) of the twenty-eight (28) source categories for PSD applicability.

Permitted Emission Units and Pollution Control Equipment

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

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted facilities/units:

- (a) One (1) charge handling process, identified as EU1, constructed in 1981, with a maximum capacity of 1.09 tons of metal per hour.
- (b) Three (3) electric induction furnaces, constructed in 1981, identified as FRN1 through FRN3, constructed in 1981, with a maximum total melting capacity of 0.8 tons of brass, bronze, or steel per hour, controlled by baghouse C6, and exhausting to stack S8.
- (c) Two (2) natural gas-fired crucible furnaces, for melting aluminum only, identified as FRN4 and FRN5, constructed in 1963 and 1964, with a melting capacity of 0.15 tons per hour and 0.14 tons per hour, respectively, each with a heating capacity of two (2.0) million British thermal units per hour, and exhausting to stack S1.
- (d) One (1) power and free pouring process, identified as EU4, with a maximum capacity of 0.8 tons of brass, bronze or steel and 1.28 tons of sand per hour, controlled by baghouse C6, and exhausting to stack S8.

- (e) One (1) vertical pouring process, identified as EU5, with a maximum capacity of 0.6 tons of aluminum or steel per hour and 0.96 tons of sand per hour, and exhausting to stack S16.
- (f) One (1) cooling process for the power and free line, identified as EU6, with a maximum capacity of 0.8 tons of metal and 1.28 tons of sand per hour, and exhausting to stacks S4, S6, and S25.
- (g) One (1) cooling process for the vertical line, identified as EU7, with a maximum capacity of 0.6 tons of metal and 0.96 tons of sand per hour, and exhausting to stack S16.
- (h) Two (2) manual shakeout processes, identified as EU8, with a combined total maximum capacity of 1.09 tons of metal and 1.74 tons of sand per hour, and exhausting inside the building.
- (i) One (1) purchased sand pneumatic transfer system, identified as EU9, with a maximum capacity of 3.50 tons of sand per hour, controlled by baghouse C10, and exhausting to stack S24.
- (j) One (1) spent sand screener, identified as EU10, with a maximum capacity of 1.28 tons of sand per hour, controlled by baghouse C11, and exhausting to stack S23.
- (k) Seven (7) core making machines, identified as COR01 through COR07, each with a maximum capacity of 0.1 tons of shell sand per hour, equipped with gas-fired heaters with a combined maximum heat input rate of 1.05 million British thermal units per hour, and exhausting inside the building.
- (l) Eight (8) mold making machines, identified as MOLD1 through MOLD8, each with a maximum capacity of 0.35 tons of shell sand per hour, equipped with gas-fired heaters with a combined maximum heat input rate of 4.5 million British thermal units per hour, and exhausting inside the building.
- (m) One (1) shotblaster, identified as WHE01, with a maximum capacity of 3.0 tons of castings per hour, controlled by baghouse C9 which has a maximum flow rate of 3,500 scfm, and exhausting inside the building.
- (n) Natural gas-fired combustion sources with heat input equal to or less than ten (10) million British thermal units per hour, including:
 - (1) A ladle preheater with maximum heat capacity of 0.5 MMBtu/hr;
 - (2) Ten (10) space heaters with a combined maximum heat input rate of 5.46 MMBtu/hr.
- (o) Paved and unpaved roads and parking lots with public access with a maximum one-way trip distance of 0.06 miles.
- (p) Six (6) grinders, identified as GRND1 through GRND6, with a capacity of 0.1425 tons of castings per hour, each controlled by four (4) fabric filters (identified as C2, C3, C4, and C5), with an outlet grain loading of less than 0.03 grains per dscf and a gas flow rate less than or equal to 4000 actual cubic feet per minute, which exhaust inside the building.
- (q) Mold release agents with low volatility contents.
- (r) Three (3) saws, identified as SAW1 through SAW3, with a maximum capacity of 1.09 tons of castings per hour, controlled by fabric filter C8, with an outlet grain loading of less than 0.03 grains per dscf, which exhausts inside the building.

New Emission Units and Pollution Control Equipment Receiving Prior Approval

There are no new construction activities included in this permit.

Existing Approvals

No previous approvals have been issued to this source.

Air Pollution Control Justification as an Integral Part of the Process

The company has submitted the following justification such that the dust collector (C9) be considered as an integral part of the shotblaster (WHE01).

- (a) The dust collector creates a pressure drop that is essential to regulating the flow rate and velocity of air through the shotblaster. An air curtain separates shot from dust in an inertial classifier below the blast chamber. The pressure drop in the dust collector and the air velocity in the classifier must be in the proper range so that the classifier separates the three types of particles - shot, sand, and dust.
- (b) The pressure drop must be created by a device that removes dust from the airstream. Otherwise, the blower on the outlet side of the dust collector would be rapidly eroded. The blower must be on the outlet side of the dust collector and shotblaster so that the blast chamber is operating under negative pressure. If the blast chamber were under positive pressure a large quantity of dust would be emitted into the indoor work area.
- (c) Maintaining the proper air flow through the blast chamber is also essential for removing dust and broken shot from the workpiece being cleaned. If the pressure drop through the baghouse was out of range, the shotblaster would not properly perform its primary purpose, cleaning castings. Product quality and efficiency would suffer.
- (d) The shotblaster is interlocked with the dust collector so that it cannot run unless the dust collector is in operation.
- (e) The dust collector has a positive economic effect because shot is currently separated from sand and grit, collected and reused. The source has suggested that it would not be possible to reuse the shot if the dust collector were not present, as it would be mixed with sand and grit. (Shot is not collected in the dust collector itself.) If reuse was not possible, the shot needed to operate the unit at its current level of usage would cost approximately \$530,145 per year. (2.8 lb shot/sec x 360 sec/hr x 10 hr/day x 5.5 days/wk x 51 wks/yr x 1/2000 ton/lb x \$375./ton)

IDEM, OAQ has evaluated the justifications and determined that the dust collector will be considered as an integral part of the shotblaster because the operation of the dust collector is necessary for the proper and economical operation of the shotblaster. Therefore, the permitting level will be determined using the potential to emit after the dust collector.

Enforcement Issue

- (a) IDEM is aware that equipment has been operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled *Unpermitted Emission Units and Pollution Control Equipment*.
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the operating permit rules.

Recommendation

The staff recommends to the Commissioner that the operation 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.

A complete application for the purposes of this review was received on February 26, 2002.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (pages 1 through 6).

Potential To Emit of Source Before Controls

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

Pollutant	Potential To Emit (tons/year)
PM	135
PM-10	99.1
SO ₂	0.14
VOC	14.4
CO	5.56
NO _x	6.66

HAP's	Potential To Emit (tons/year)
Chromium	6.17
Lead	7.35
Manganese	0.42
Nickel	3.39
All Others	insignificant
TOTAL	17.4

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants are less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7. (For Part 70 applicability PM10 and not PM is the pollutant of concern.)
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM and PM10 are greater than 25 tons per year, therefore, the source is subject to the provisions of 326 IAC 2-6.1. A MSOP will be issued.
- (c) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year, therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (d) Fugitive Emissions
Since this type of operation is not in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, fugitive particulate emissions are not counted toward determination of PSD.

County Attainment Status

The source is located in Saint Joseph County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
Ozone	Maintenance attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Saint Joseph County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) Saint Joseph County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) Fugitive Emissions
 Since this type of operation is not in one of the 28 listed source categories under 326 IAC 2-2, or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive emissions are not counted toward determination of PSD.

Source Status

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	32.2
PM10	22.6
SO ₂	0.14
VOC	14.4
CO	5.56
NO _x	6.66
Single HAP	2.62
Combination HAPs	6.24

- (a) This existing source is not a major stationary source because it does not emit 250 tons per year or more of any regulated attainment pollutants. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) This is based on the potential to emit from the entire source (see calculations provided in Appendix A).

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,

- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This is the first air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) The three electric furnaces at this source used to melt brass and bronze are not subject to the requirements of the New Source Performance Standard for Secondary Brass and Bronze Production Plants (326 IAC 12, 40 CFR Part 60, Subpart M) because the furnaces each have a production capacity lower than the 1000 kg/hr threshold and foundry furnaces from which molten brass or bronze are cast into the shape of finished products are not considered to be affected facilities.
- (c) The three electric furnaces at this source used to melt steel are not subject to the requirements of the New Source Performance Standard for Ferroalloy Production Facilities (326 IAC 12, 40 CFR Part 60, Subpart Z) because this source does not use electric submerged arc furnaces and does not produce silicon metal, ferrosilicon, calcium silicon, silicomanganese zirconium, ferrochrome silicon, silvery iron, high-carbon ferrochrome, charge chrome, standard ferromanganese, silicomanganese, ferromanganese silicon, or calcium carbide.
- (d) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.
- (e) This source is not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants for Secondary Aluminum Production (326 IAC 14, 40 CFR Part 63, Subpart RRR) because it is not a secondary aluminum production facility. As defined in 40 CFR 63.1503, aluminum foundries are not considered to be secondary aluminum production facilities if the only materials they melt are clean charge, customer returns, or internal scrap, and if they do not operate sweat furnaces, thermal chip dryers/delacquering and kilns/decoating kilns.

State Rule Applicability - Entire Source

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

Charles O. Hiler & Son, Inc. is a foundry that was constructed in 1963 and 1964. This source consists of a brass, bronze, steel, and aluminum foundry processing clean pre-alloyed ingots of brass, bronze, steel, and aluminum as charge along with brass, bronze, steel, and aluminum scrap generated within the source. The source does not use secondary scrap brought from other sources and does not alloy metals on-site. Therefore, it is not considered a secondary metal production source and is not in one (1) of the twenty-eight (28) source categories. In 1995, the source applied for a construction permit (CP 141-5026-00103) to allow the processing of steel at the three furnaces and associated pouring, cooling and finishing facilities used for brass and bronze production. After these modifications, 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))

This source has the potential to 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 subject to 326 IAC 2-6 (Emission Reporting) because it has the potential to emit more than ten (10) tons per year of VOC and is located in St. Joseph County. Pursuant to this rule, the Permittee must annually submit an emission statement for the source. The annual statement must contain the minimum requirement as specified in 326 IAC 2-6-4.

326 IAC 5-1 (Opacity Limitations)

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

- (a) Opacity shall not exceed an average of forty percent (40%) 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.

State Rule Applicability - Furnaces, Pouring Line and Sand Handling Facilities

326 IAC 6-1 (Nonattainment Area Particulate Limitations)

This source is subject to the requirements of 326 IAC 6-1-2(a) (Nonattainment Area Particulate Limitations) because:

- (a) It is located in a county listed in 326 IAC 6-1-1.
- (b) It is not specifically listed in 326 IAC 6-1-18.
- (c) It has actual emissions of ten (10) tons or more of PM per year.

In addition, this source is not a gray iron foundry. Therefore, the requirements of 326 IAC 6-1-2(e) are not applicable. Pursuant to 326 IAC 6-1-2(a), the following processes at this source shall not discharge to the atmosphere gases which contain particulate matter in excess of 0.03 grains per dry standard cubic foot (dscf). For each emissions unit, the limits in pounds per hour are as shown in the table below:

Emissions Unit	Emission Unit ID #	Stack	Exhaust Flow Rate (acfm)	Baghouse	PM Emissions Limit (lb/hr)
Three (3) Electric Induction Furnaces	FRN 1, 2 & 3	S8	10000	C6	2.57
Two (2) Gas-fired Crucible Furnaces	FRN 4 & 5	S1	12000	-	3.09
Power and Free Pouring Line	EU4	S8	10000	C6	2.57
Vertical Pouring Line	EU5	S16	20000	-	5.14
Power and Free Cooling Line	EU6	S4, 6 & 25	10000	-	2.57
Vertical Cooling Line	EU7	S16	20000	-	5.14
Pneumatic Sand Transfer	EU9	S24	2200	C10	0.57
Spent Sand Screener	EU10	S23	3100	C11	0.8

Shotblaster	WHE01	C9	3500	C9	0.9
Six (6) Grinders	GRND1 - 6	C2 - 5	2,400 each	C2 - 5	0.62 (each)
One (1) Cutoff Saw, Two (2) Band Saws	SAW1-3	C8	1200	C8	0.31 (each)

Based on the emissions calculations provided in Appendix A, these emission units will be in compliance with 326 IAC 6-1-2.

The baghouses (C6, C10, C11, C9, C2, C3, C4, C5 and C8) controlling emissions from FRN1, FRN2, FRN3, EU4, EU9, EU10, WHE01, GRND1 - 6 and SAW1 must be in operation when their respective emissions units are in operation to comply with these limits.

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

Since 326 IAC 6-1(Nonattainment Area Particulate Limitations) applies to FRN1, FRN2, FRN3, FRN4, FRN5, EU4, EU5, EU6, EU7, EU9, EU10, WHE01, GRND1 - 6 and SAW1, 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) does not apply, pursuant to 326 IAC 6-3-1(b)(1).

326 IAC 11-1 (Existing Foundries)

Because 326 IAC 6-1(County Specific Particulate Emission Limitations) applies, 326 IAC 11-1 (Existing Foundries) does not apply.

Conclusion

The operation of this brass, bronze, steel, and aluminum foundry shall be subject to the conditions of the attached proposed Minor Source Operating Permit 141-5026-00103.

Appendix A: Emission Calculations
Criteria Pollutant Emissions: Furnaces and Foundry

Company Name: Charles O. Hiler & Son
Address City IN Zip: Route 6 East, Walkerton, Indiana 46574
MSOP: 141-5026-00103
Reviewer: ERG/ST
Date: November 19, 2003

Emissions Unit (SCC)	Process Rate (tons/hr)	Pollutant	Emission Factor (lb/ton)	Potential to Emit					
				PM	PM10	SO ₂	VOC	CO	NO _x
Scrap and Charge Handling (SCC 3-04-003-15)	1.09	PM PM10	0.60 0.36	2.86	1.72	0	0	0	0
Brass/Steel Electric Induction Furnaces (SCC 3-04-002-24)	0.80	PM PM10	20.0 20.0	70.1	70.1	0	0	0	0
Aluminum Crucible Furnaces (SCC 3-04-001-02)	0.29	PM PM10	1.9 1.7	2.41	2.16	0.01	0.10	1.47	1.75
Natural Gas Burners 4 MMBtu/hr Emission Factor = lb/MMCF (SCC 1-02-006-03)	35.04 MMCF/yr	SO ₂ VOC CO NO _x ^a	0.6 5.5 84.0 100.0						
Power and Free Pouring Line (SCC 3-04-003-20)	0.80	PM PM10 SO ₂ VOC NOX	4.20 2.06 0.02 0.14 0.01	14.7	7.22	0.07	0.49	0	0.04
Power and Free Cooling Line (SCC 3-04-003-25)	0.80	PM PM10	1.40 1.40	4.91	4.91	0	0	0	0
Vertical Pouring Line (SCC 3-04-003-20)	0.29	PM PM10 SO ₂ VOC NOX	4.20 2.06 0.02 0.14 0.01	5.33	2.62	0.03	0.18	0	0.01
Vertical Cooling Line (SCC 3-04-003-25)	0.29	PM PM10	1.40 1.40	1.78	1.78	0	0	0	0

Emission factors for Charge Handling are from FIRE 6.23, Secondary Metal Production - Gray Iron Foundries (SCC 3-04-003-15).

Emission factors for Brass/ Steel Electric Induction Furnaces are from FIRE 6.23, Brass Electric Induction (SCC 3-04-002-24).

PM and PM10 emission factors for Aluminum Crucible Furnaces are from FIRE 6.23, Aluminum - Crucible (SCC 3-04-001-02).

SO₂, VOC, CO and NO_x emission factors for natural gas furnace burners are from AP-42, Chapter 1.4, Tables 1.4-1 and 1.4-2. (July 98)

Emission factors for pouring are from FIRE Vol II, Secondary Metal Production - Gray Iron Foundries: Pouring/Castings (SCC 3-04-003-20).

Emission factors for cooling are from FIRE Vol II, Secondary Metal Production - Gray Iron Foundries: Castings Cooling (SCC 3-04-003-25).

^a Emission factors for NO_x: Uncontrolled = 100 lb/MMCF

1 MMBtu = 1,000,000 Btu 1 MMCF = 1,000,000 Cubic Feet of Gas

Methodology

PTE (tons/yr) = Process Rate (tons/hr) x Emission Factor (lb/ton) x 1/2000 (ton/lb) x 8760 (hr/yr)

PTE (tons/yr) = Fuel Rate (MMCF/yr) x Emission Factor (lb/MMCF) x 1/2000 (ton/lb)

Appendix A: Emission Calculations
Criteria Pollutant Emissions: Sand Handling, Shakeout, Finishing

Company Name: Charles O. Hiler & Son
Address City IN Zip: Route 6 East, Walkerton, Indiana 46574
MSOP: 141-5026-00103
Reviewer: ERG/ST
Date: November 19, 2003

Emissions Unit	Process Rate (tons/hr)	Pollutant	Emission Factor (lb/ton)	Potential to Emit					
				PM	PM10	SO ₂	VOC	CO	NO _x
Sand Handling (transfer and screening) ^a (SCC 3-04-003-50)	1.74 tons sand	PM PM10	3.60 0.54	27.4	4.12	0	0	0	0
Manual Shakeout (PM estimated to be 10% of emission factor ^b) (SCC 3-04-003-31).	1.09 tons metal	PM PM10 VOC	0.32 0.22 1.20	1.53	1.07	0	5.73	0	0
Shell Core Machines	0.70	VOC	0.5				1.53		
		Mass Balance (See App. A Page 5)							
Shell Mold Machines	2.80	VOC	0.5				6.13		
		Mass Balance (See App. A Page 5)							
Shotblast Machine Method # 1 (STAPPA/ALAPCO) ^c Emission Factor = lbPM/lb shot Control is Integral	Blast rate 2.8 (lb shot/sec)	PM PM10	0.004 0.00344	3.51	3.02	0	0	0	0
	Capture Efficiency		0.99						
	Control Efficiency		0.99						
Shotblast Machine Method # 2 (3-04-003-40) ^d Control is Integral	1.09	PM PM10	17.0 1.70	1.62	0.16				
	Capture Efficiency		0.99						
	Control Efficiency		0.99						
Grinding (SCC 3-04-003-60)	0.86	PM PM10	0.01 0.0045	0.04	0.02	0	0	0	0
Combustion Units ^e 11.1 MMBtu/hr total 1-02-006-03 Emission Factor = lb/MMCF	97.2 MMCF/yr	PM PM10 SOx NOx VOC CO	7.6 7.6 0.6 100 5.5 84	0.37	0.37	0.03	0.27	4.08	4.86
Unpaved Roads Emission Factor = lb/mile	17.7 miles/yr	PM PM10	3.3 1.06	0.03	0.01				

^a Emission factors for sand handling are from FIRE Vol II, Secondary Metal Production - Gray Iron Foundries: Sand Grinding/Handling (SCC 3-04-003-50).

^b The emission factor for shakeout is based on a shaker machine (FIRE Vol II, Secondary Metal Production - Gray Iron Foundries: Casting Shakeout (SCC 3-04-003-31)). At this facility, castings are manually knocked out of molds. Emissions at this facility are approximately 90% less, based on an engineering estimate, because the operation is manual, not mechanized. This emission factor includes both the pneumatic sand transfer and the spent sand screener.

^c Emission factors for the Wheelabrator Shotblast Machine (Method #1) is from STAPPA/ALAPCO, Section 3 "Abrasive Blasting" for steel shot. PM10 emissions are 0.86 that of PM. Control is by integral filters and efficiencies are from manufacturer's literature. IDEM has deemed control to be integral to operation of this facility.

^d Emission factors for the shotblasting machine (Method #2) are from FIRE, Vol. II - Gray Iron Foundries - Grinding/Cleaning (SCC 3-04-003-40). Method #2

^e Combustion units include a ladle preheater (0.5 MMBtu), a shell core machine (1 MMBtu), eight mold making machines (4.5 MMBtu total), and ten space heaters (5.46 MMBtu total). Crucible furnaces (4 MMBtu total) are not included in this total. 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). Emission factors for NOx: Uncontrolled = 100 lb/MMCF. All Emission factors are based on normal firing. 1 Cubic Feet of Gas = 1,000 Btu

Methodology

PTE for PM and PM10 (tons/yr) = Process Rate (tons /hr) x Emission Factor (lb/ton) x 8760 (hr/yr) x 1/2000 (ton/lb)

PTE for PM and PM10 (ShotBlast)(Method #1)(tons/yr) = Blast Rate (lb/sec) x Emission Factor (lbPM/lb shot) x 31536000 (sec/yr) x 1/2000 (ton/lb) x (1-control eff. x capture eff.)

PTE for PM and PM10 (ShotBlast)(Method #2)(tons/yr) = Process Rate (lb/sec) x Emission Factor (lbPM/ton) x 8760 (hr/yr) x 1/2000 (ton/lb) x (1-control eff. x capture eff.)

PTE for SO₂, NO_x, CO and VOC (Nat. Gas)(tons/yr) = Heat input capacity (MMBtu/hr) x 8760 hours/year x 1 MMCF/1000 MMBtu x Emission Factor (lb/MMCF) x 1/2000 (tons/lb)

Appendix A: Emission Calculations
HAP Emissions: Furnaces and Foundry

Company Name: Charles O. Hiler & Son
Address City IN Zip: Route 6 East, Walkerton, Indiana 46574
MSOP: 141-5026-00103
Reviewer: ERG/ST
Date: November 19, 2003

Emission Unit (SCC)	Process Rate (tons/hr)	PM Emission Factor (lb/ton)	HAP	HAP %	Potential HAP Emissions Before Controls						
					Chromium (ton/yr)	Manganese (ton/yr)	Nickel (ton/yr)	Lead (ton/yr)	Phenol (ton/yr)	Benzene (ton/yr)	TOTAL (ton/yr)
Brass Scrap & Charge Handling (3-04-003-15)	0.80	0.6	Chromium Manganese Nickel Lead	0.00% 0.00% 0.38% 7.70%	0.00	0.00	0.01	0.16	0	0	0.17
Steel Scrap & Charge Handling (3-04-003-15)	0.80	0.6	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 0.00%	0.39	0.03	0.20	0.00	0	0	0.62
Worst Case HAP Emissions: Brass or Steel					0.39	0.03	0.20	0.16	0	0	0.79
Aluminum Scrap & Charge Handling (3-04-003-15)	0.29	0.6	Chromium Manganese Nickel Lead	0.00% 0.38% 0.19% 0.00%	0.00	0.00	0.00	0.00	0	0	0.00
Brass Induction Furnace (3-04-002-24)	0.80	20	Chromium Manganese Nickel Lead	0.00% 0.00% 0.38% 7.70%	0.00	0.00	0.27	5.40	0	0	5.66
Steel Induction Furnace (3-04-007-05)	0.80	0.1	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 0.00%	0.07	0.00	0.03	0.00	0	0	0.10
Worst Case HAP Emissions: Brass or Steel					0.07	0.00	0.27	5.40	0	0	5.73
Aluminum Crucible Furnace (3-04-003-15)	0.29	1.9	Chromium Manganese Nickel Lead	0.00% 0.38% 0.19% 0.00%	0.00	0.00	0.00	0.00	0	0	0.00
Power & Free Pouring Line (3-04-003-20)	0.80	4.2	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 7.70%	2.76	0.19	1.42	1.13	0	0	5.50
Worst Case HAP Emissions: Brass or Steel					0.92	0.06	0.47	0.38	0	0	1.83
Power & Free Cooling Line (3-04-003-25)	0.80	1.4	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 7.70%	0.92	0.06	0.47	0.38	0	0	1.83
Worst Case HAP Emissions: Brass or Steel					1.00	0.07	0.51	0.00	0	0	1.58
Vertical Pouring Line (3-04-003-20)	0.29	4.2	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 0.00%	1.00	0.07	0.51	0.00	0	0	1.58
Worst Case HAP Emissions: Alum. or Steel					0.33	0.02	0.17	0.00	0	0	0.53
Vertical Cooling Line (3-04-003-25)	0.29	1.4	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 0.00%	0.33	0.02	0.17	0.00	0	0	0.53
Worst Case HAP Emissions: Alum. or Steel											

Source of % HAPs for all metals is from Lab Analysis.

Source of % HAPs for VOC is from MSDS.

Power and Free Pouring and Cooling Line HAP Emissions - % HAPs represent worst case for either brass or steel.

Vertical Pouring and Cooling Line HAP Emissions - % HAPs represent worst case for either aluminum or steel.

Methodology

PTE for HAPs (tons/yr) = Process rate (tons/hr) x PM Emission Factor (lb/ton) x 8760 (hr/yr) x 1/2000 (ton/lb) x % HAPs in PM.

Appendix A: Emission Calculations
HAP Emissions: Sand Handling, Shakeout, Finishing

Company Name: Charles O. Hiler & Son
Address City IN Zip: Route 6 East, Walkerton, Indiana 46574
MSOP: 141-5026-00103
Reviewer: ERG/ST
Date: November 19, 2003

Emission Unit (SCC)	Process Rate (tons/hr)	PM Emission Factor (lb/ton)	HAP	HAP %	Potential HAP Emissions Before Controls						
					Chromium (ton/yr)	Manganese (ton/yr)	Nickel (ton/yr)	Lead (ton/yr)	Phenol (ton/yr)	Benzene (ton/yr)	TOTAL (ton/yr)
Manual Shakeout PM estimated to be 10% of EF ^a	1.09	0.32	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 7.70%	0.03	0.00	0.01	0.01	0	0	0.06
Worst Case HAP Emissions: Brass or Steel											
Sand Handling	1.74	0	none		0	0	0	0	0	0	0.00
Shell Core Machines 3-04-003-70	0.70 (total)	0.5	Phenol Benzene	7.E-07 2.E-07	0	0	0	0	1.0E-06	3.5E-07	0.00
Shell Mold Machines 3-04-003-70	2.80 (total)	0.5	Phenol Benzene	7.E-07 2.E-07	0	0	0	0	4.0E-06	1.4E-06	0.00
Shot Blast Machine 3-04-003-40		PM Emissions 3.51 (tons/yr)	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 7.70%	0.66	0.05	0.34	0.27	0	0	1.31
Worst Case HAP Emissions: Brass or Steel											
Grinders (6) 3-04-003-60	0.855	0.01	Chromium Manganese Nickel Lead	18.77% 1.29% 9.62% 7.70%	0.01	0.00	0.00	0.00	0	0	0.01
Worst Case HAP Emissions: Brass or Steel											

Source of % HAPs for all metals is from Lab Analysis.

Source of % HAPs for VOC is from MSDS.

Shot Blast HAP emissions are based on total PM emissions (see Appendix A page 2)

Methodology

PTE for HAPs (tons/yr) = Process rate (tons/hr) x PM Emission Factor (lb/ton) x 8760 (hr/yr) x 1/2000 (ton/lb) x % HAPs in PM.

PTE for HAPs for ShotBlast - HAP (ton/yr) = PM emissions (tons/yr) x % HAPs in PM.

Appendix A: Emission Calculations
VOC Emissions: Shell Core and Mold Making

Company Name: Charles O. Hiler & Son
Address City IN Zip: Route 6 East, Walkerton, Indiana 46574
MSOP: 141-5026-00103
Reviewer: ERG/ST
Date: November 19, 2003

Bonding Resin		VOC Emission Factor	Worst Case VOC Emissions
Bonding Resin = 10.95 lbs Resin/ton Sand		0.244 lb/ton	0.244 lb/ton
VOC Content 0.196 lbs/gal			
Density of Resin 8.8 lbs/gal			
VOC Emission Factor = (Resin Capacity)/(1/Density)(VOC Content)			
VOC Emission Factor = (10.95 lbs Resin/ton Sand)(1 gal/8.8 lbs)(0.196 lbs VOC/gal)			
Release Agent		VOC Emission Factor	Worst Case VOC Emissions
Release Agent = 0 VOCs		0.000 lb/ton	0.000 lb/ton
Shell Sand		VOC Emission Factor*	Worst Case VOC Emissions
Type of Shell Sand Purchased	TG940BP	0.120 lb/ton	0.254 lb/ton
	or		
	XCS 730FM-6	0.144 lb/ton	
	or		
	XM 40BP	0.204 lb/ton	
	or		
XM 48BP	0.254 lb/ton		
or			
Super F II J19N12689	0.19 lb/ton		
*VOC Emissions Factors for each of the purchased shell sands is as provided by the manufacturer.			
Methodology			
Shell Core and Mold Making Worst Case VOC Emissions (lb/ton sand) = Worst Case VOC Emissions for Bonding Resin (lb/ton) + Worst Case VOC Emissions for Release Agent (lb/ton) + Worst Case VOC Emissions for Shell Sand (lb/ton)			
			Shell Core and Mold Making Worst Case VOC Emissions Total
			0.498 lb/ton sand

Appendix A: Emission Calculations
Emissions Summary: Criteria Pollutants and HAPs: Before and After Controls

Company Name: Charles O. Hiler & Son
Address City IN Zip: Route 6 East, Walkerton, Indiana 46574
MSOP: 141-5026-00103
Reviewer: ERG/ST
Date: November 19, 2003

Emissions Before Controls							
Emissions Unit	PM	PM10	SO ₂	VOC	CO	NO _x	HAPs
Scrap and Charge Handling	2.86	1.72	0	0	0	0	0.79
Brass/Steel Electric Induction Furnaces	70.1	70.1	0	0	0	0	5.73
Aluminum Crucible Furnace w/ Nat. Gas Burner	2.41	2.16	0.01	0.10	1.47	1.75	0.00
Power and Free Pouring Line	14.7	7.22	0.07	0.49	0	0.04	5.50
Power and Free Cooling Line	4.91	4.91	0	0	0	0	1.83
Vertical Pouring Line	5.33	2.62	0.03	0.18	0	0.01	1.58
Vertical Cooling Line	1.78	1.78	0	0	0	0	0.53
Sand Handling	27.4	4.12	0	0	0	0	0
Manual Shakeout	1.53	1.07	0	5.73	0	0	0.06
Shell Core Machines	0.00	0.00	0	1.53	0	0	0.00
Shell Mold Machines	0.00	0.00	0	6.13	0	0	0.00
Shotblast Machine	3.51	3.02	0	0	0	0	1.31
Grinding	0.04	0.02	0	0	0	0	0.01
Combustion Units	0.37	0.37	0.03	0.27	4.08	4.86	0
Unpaved Roads	0.03	0.01	0	0	0	0	0
Totals	135	99.1	0.14	14.4	5.56	6.66	17.4

Emissions After Controls									
Emissions Unit	Capture Eff. %	Control Eff. %	PM	PM10	SO ₂	VOC	CO	NO _x	HAPs
Scrap and Charge Handling	0%	0%	2.86	1.72	0.00	0.00	0.00	0.00	0.79
Brass/Steel Electric Induction Furnaces	80%	99%	14.6	14.6	0.00	0.00	0.00	0.00	1.19
Aluminum Crucible Furnace w/ Nat. Gas Burner	80%	99%	0.50	0.45	0.01	0.10	1.47	1.75	0.00
Power and Free Pouring Line	75%	99%	3.79	1.86	0.07	0.49	0.00	0.04	1.42
Power and Free Cooling Line	63%		1.82	1.82	0.00	0.00	0.00	0.00	0.68
Vertical Pouring Line	63%		1.97	0.97	0.03	0.18	0.00	0.01	0.59
Vertical Cooling Line	63%		0.66	0.66	0.00	0.00	0.00	0.00	0.20
Sand Handling	99%	99%	0.55	0.08	0.00	0.00	0.00	0.00	0.00
Manual Shakeout	0%	0%	1.53	1.07	0.00	5.73	0.00	0.00	0.06
Shell Core Machines	0%	0%	0.00	0.00	0.00	1.53	0.00	0.00	0.00
Shell Mold Machines	0%	0%	0.00	0.00	0.00	6.13	0.00	0.00	0.00
Shotblast Machine	control is integral		3.51	3.02	0.00	0.00	0.00	0.00	1.31
Grinding	95%	99%	0.00	0.00	0.00	0.00	0.00	0.00	0.01
Combustion Units	0%	0%	0.37	0.37	0.03	0.27	4.08	4.86	0.00
Unpaved Roads	0%	0%	0.03	0.01	0.00	0.00	0.00	0.00	0.00
Totals			32.2	26.6	0.14	14.4	5.56	6.66	6.24

Control is by baghouse except for the vertical pouring and power and vertical cooling lines which are enclosed.