INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We make Indiana a cleaner, healthier place to live.

Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

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

December 9, 2003

TO: Interested Parties / Applicant

RE: Dalton Corporation - Warsaw / 085-18009-00003

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

PART 70 PSD SIGNIFICANT SOURCE MODIFICATION
OFFICE OF AIR QUALITY

Dalton Corporation Warsaw Manufacturing Facility
1900 E. Jefferson Street
Warsaw, Indiana 46580

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

This approval is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit is also issued under the provisions of 326 IAC 2-2 (Prevention of Significant Deterioration), with conditions listed on the attached pages.

Source Modification No.: 085-18009-00003	
Issued by: Original Signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: December 9, 2003

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) . The information describing the emission units 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 approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

The Permittee owns and operates a gray iron foundry.

Responsible Official:	Vice President of Foundry Operations
Source Address:	P.O. Box 1388, Warsaw, Indiana 46580
Mailing Address:	1900 E. Jefferson Street, Warsaw, Indiana 46580
General Source Phone Number:	574-267-8111
SIC Code:	3321
County Location:	Kosciusko County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Major Source under PSD Rules; Major Source, Section 112 of the Clean Air Act; and 1 of 28 Source Categories (secondary metal production)

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

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

(a) one (1) Herman 3 pouring process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(b) one (1) Herman 3 castings cooling process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(c) one (1) Herman 3 shakeout process, constructed in 1991 and to be modified in 2003, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions controlled by scrubber #4 and baghouse #11, and exhausting to stacks 4 and 11 respectively;

(d) Herman 3 sand handling operations constructed in 1991, with a maximum capacity of 150 tons of sand per hour, with emissions controlled by scrubbers #1 and #4, and baghouse #11, and exhausting to stacks 1, 4, and 11 respectively;

Notes: Dalton Corporation is proposing to lengthen the existing Herman 3 cooling line. No modifications are proposed for the Herman 3 pouring process, the Herman 3 shakeout process, or the Herman 3 sand handling process. However, Dalton Corporation has requested a PSD permit for VOC emissions from the entire Herman 3 line.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21) that are affected by this modification.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

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

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

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

SECTION B GENERAL CONSTRUCTION CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

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

B.2 Effective Date of the Permit [IC13-15-5-3]

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

B.3 Revocation of Permits [326 IAC 2-2-8]

Pursuant to 326 IAC 2-2-8(a)(1), this permit to construct shall become invalid if construction is not commenced within eighteen (18) months after receipt of this approval, if construction is discontinued for a period of eighteen (18) months or more, or if construction is not completed within a reasonable time. The IDEM may extend the eighteen (18) month period upon satisfactory showing that an extension is justified.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

(a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.

(b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.

(c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

(d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.

(e) In the event that the Part 70 application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:

(1) If the Part 70 draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Part 70 draft.

(2) If the Part 70 permit has gone through final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go through a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Part 70 permit at the time of

issuance.

(3) If the Part 70 permit has gone through public notice, but has not gone through final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Part 70 permit, and the Title V permit will issued after EPA review.

SECTION C GENERAL OPERATION CONDITIONS

C.1 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(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 a responsible official 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.

(c) A responsible official is defined at 326 IAC 2-7-1(34).

C.2 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)] [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) when operation begins, including the following information on each facility:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(d) Records of preventive maintenance shall be retained for a period of at least five (5) years.

These records shall be kept 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.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

(a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

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

Indiana Department of Environmental Management
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 the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

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

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission units vented to the control equipment are in operation.

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

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

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

C.8 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, or as 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 approval, 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 approval, 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. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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 source submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

C.11 Maintenance of Opacity Monitoring Equipment [326 IAC 2-7-5(3)(A)(iii)]

(a) The Permittee shall install, calibrate, maintain, and operate all necessary continuous opacity monitoring systems (COMS) and related equipment.

(b) All continuous opacity monitoring systems shall meet the performance specifications of 40 CFR 60, Appendix B, Performance Specification No. 1, and are subject to monitor system certification requirements pursuant to 326 IAC 3-5.

(c) In the event that a breakdown of a continuous opacity monitoring system occurs, a record shall be made of the time and reason of the breakdown and efforts made to correct the problem.

(d) Whenever a continuous opacity monitor (COM) is malfunctioning or will be down for calibration, maintenance, or repairs for a period of one (1) hour or more, compliance with the applicable opacity limits shall be demonstrated by the following:

(1) Visible emission (VE) notations shall be performed once per hour during daylight operations following the shutdown or malfunction of the primary COM. A trained employee shall record whether emissions are normal or abnormal for the state of operation of the emission unit at the time of the reading.

(A) 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.

(B) If abnormal emissions are noted during two consecutive emission notations, the Permittee shall begin Method 9 opacity observations within four hours of the second abnormal notation.

(C) VE notations may be discontinued once a COM is online or formal Method 9 readings have been implemented.

(2) If a COM is not online within twenty-four (24) hours of shutdown or malfunction of the primary COM, the Permittee shall provide certified opacity reader(s), who may be employees of the Permittee or independent contractors, to self-monitor the emissions from the emission unit stack.

(A) Visible emission readings shall be performed in accordance with 40 CFR 60, Appendix A, Method 9, for a minimum of five (5) consecutive six (6) minute averaging periods beginning not more than twenty-four (24) hours after the start of the malfunction or down time.

(B) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least once every four (4) hours during daylight operations, until such time that a COM is in operation.

(C) Method 9 readings may be discontinued once a COM is online.

(D) Any opacity exceedances determined by Method 9 readings shall be reported with the Quarterly Opacity Exceedances Reports.

(3) If abnormal emissions are observed, the Permittee shall take reasonable response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. 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.

(e) Nothing in this permit shall excuse the Permittee from complying with the requirements to operate a continuous opacity monitoring system pursuant to 326 IAC 2-2-3.

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

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

C.13 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

(a) Whenever a condition in this permit requires the measurement of 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 (±2%) of full scale reading.

(b) Whenever a condition in this permit requires the measurement of flow rate, ultra-sonic power, ozone generator plasma voltage, or hydrogen peroxide usage, the instrument 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 (±2%) of full scale reading.

(c) 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.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.14 Compliance Response Plan - Preparation, Implementation, Records, and Reports[326 IAC 2-7-5] [326 IAC 2-7-6]

(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 and the Permittee documents such response in accordance with subsection (e) below, 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, the IDEM, OAQ shall be promptly notified of the expected date of the shut down, the status of the applicable compliance monitoring parameter with respect to normal, and the results of the actions taken up to the time of notification.

(4) Failure to take reasonable response steps shall constitute 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) When implementing reasonable steps in response to a compliance monitoring condition, if the Permittee determines that an exceedance of an emission limitation has occurred, the Permittee shall report such deviations pursuant to Section B-Deviations from Permit Requirements and Conditions.

(e) The Permittee shall record all instances when response steps are taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

(f) 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.15 Emergency Provisions [326 IAC 2-7-16]

(a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

(1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;

(2) The permitted facility was at the time being properly operated;

(3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;

(4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance Section), or
Telephone Number: 317-233-5674 (ask for Compliance Section)
Facsimile Number: 317-233-5967

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

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

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

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

(A) A description of the emergency;

(B) Any steps taken to mitigate the emissions; and

(C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of

326 IAC 2-7 and any other applicable rules.

(g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.

C.16 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.

(b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

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

(a) Records of all required data, reports and support information 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 kept at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

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

(a) The 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, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(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 2-7-5(15)]

Herman 3 mold line

(a) one (1) Herman 3 pouring process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(b) one (1) Herman 3 castings cooling process, constructed in 1991 and to be modified in 2003, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(c) one (1) Herman 3 shakeout process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions controlled by scrubber #4 and baghouse #11 and exhausting to stacks #4 and #11 respectively;

(d) Herman 3 sand handling operations constructed in 1991, with a maximum capacity of 150 tons of sand per hour, with emissions controlled by scrubbers #1 and #4, and baghouse #11, and exhausting to stacks 1, 4, and 11 respectively.

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

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

D.1.1 VOC Emissions [326 IAC 2-2-3] [326 IAC 8-1-6] [326 IAC 2-7-6(3)] [326 IAC 2-7-15]

Pursuant to the requirements of 326 IAC 2-2-3 (PSD) and 326 IAC 8-1-6, BACT shall consist of the following condition.

(a) The metal throughput to the Herman 3 process shall not exceed 90,578 tons per 12 consecutive month period, with compliance determined at the end of each month.

(b) The sand throughput to the Herman 3 process shall not exceed 543,470 tons per 12 consecutive month period, with compliance determined at the end of each month.

(c) The VOC emissions from the Herman 3 pouring process shall not exceed 0.163 pounds per ton of metal.

(d) The VOC emissions from the Herman 3 cooling process shall not exceed 0.36 pounds per ton of metal. The Department may revise this permit to adjust the VOC limitation based upon the results of the stack test required in Condition D.1.7. The Department will provide an opportunity for public notice and comment prior to finalizing any permit revision. IC 13-15-7-3 (Revocation or Modification of a Permit: Appeal to Board) shall apply to this permit condition.

(e) The combined VOC emissions from the Herman 3 shakeout and sand handling operations shall not exceed 0.115 pounds per ton of metal and sand total.

(f) The VOC emissions from the Herman 3 line shall be reduced through the continuous use of

the Sonoperoxone[R] system or an equivalent system, sand system optimization, low VOC binder materials, and automatic mold vent-off gas ignition.

(g) In order to bring the Herman 3 line into compliance with the requirements of paragraphs (a) through (f) of this condition, the Permittee shall comply with the following schedule for achieving compliance.

(1) Within fifteen (15) days after issuance of this PSD permit, the Permittee shall issue a purchase order for the Sonoperoxone[R] system or equivalent system.

(2) Within eight (8) months after issuance of this PSD permit, but no later than the date of startup of the modified Herman 3 cooling process, the Permittee shall complete the installation of the Sonoperoxone[R] system or equivalent system and shall commence initial operation of the Sonoperoxone[R] system or equivalent system.

(3) Within twelve (12) months after commencing operation of the modified Herman 3 cooling line, the Permittee shall complete troubleshooting and optimization of the Sonoperoxone[R] system or equivalent system, and shall demonstrate compliance with the VOC BACT limits.

D.1.2 Particulate Matter Emissions [326 IAC 2-2]

In order to render the requirements of 326 IAC 2-2 (PSD) not applicable for PM, PM10, and lead emissions, the following conditions shall apply:

(a) The PM emissions from the Herman 3 pouring process shall not exceed 0.1176 pounds per ton of metal throughput.

(b) The PM10 emissions from the Herman 3 pouring process shall not exceed 0.0524 pounds per ton of metal throughput.

(c) The PM emissions from the Herman 3 cooling process shall not exceed 0.2881 pounds per ton of metal throughput.

(d) The PM10 emissions from the Herman 3 cooling process shall not exceed 0.1959 pounds per ton of metal throughput.

(e) The PM emissions from the Herman 3 shakeout and sand handling process shall not exceed 0.034 pounds per ton of metal and sand throughput.

(f) The PM10 emissions from the Herman 3 shakeout and sand handling process shall not exceed 0.058 pounds per ton of metal and sand throughput.

(g) The combined lead emissions from the Herman 3 pouring, cooling, shakeout and sand handling processes shall not exceed 0.013 pounds per ton of metal throughput.

(h) The metal throughput to the Herman 3 line shall not exceed 90,578 tons per 12 consecutive month period with compliance determined at the end of each month.

(i) The sand throughput to the Herman 3 line shall not exceed 543,470 tons per 12 consecutive month period with compliance determined at the end of each month.

The conditions of this permit shall supersede the requirements of Operation Conditions #5 and #7 of

CP085-2141-00003 issued on December 12, 1991.

D.1.3 Particulate (PM) [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the following conditions shall apply:

(a) The particulate emissions from the Herman 3 pouring operation shall not exceed 58.12 pounds per hour when operating at a process weight rate of 193 tons per hour.

(b) The particulate emissions from the Herman 3 cooling operation shall not exceed 58.12 pounds per hour when operating at a process weight rate of 193 tons per hour.

(c) The particulate emissions from the Herman 3 shakeout and sand handling operation shall not exceed 58.12 pounds per hour when operating at a process weight rate of 193 tons per hour.

The pounds per hour limitations were calculated with the following equation:

Interpolation and extrapolation of the data for the process weight rate greater than 60,000 pounds per hour shall be accomplished by use of the equation:

$E = 55 P^{0.11} - 40$ where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

D.1.4 General Provisions Relating to NESHAP [40 CFR Part 63, Subpart A]

The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the iron foundry except when otherwise specified in 40 CFR 63 Subpart EEEEE. The Permittee must comply with these requirements on and after the effective date of 40 CFR 63 Subpart EEEEE.

D.1.5 NESHAP Emissions Limitation [40 CFR 63, Subpart EEEEE]

(a) The affected source, the iron and steel foundry, is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries, (40 CFR 63, Subpart EEEEE), effective the date the rule is published in the Federal Register. Pursuant to this rule, the Permittee must comply with 40 CFR 63, Subpart EEEEE on and after the date that is three years after the effective date of the rule, or accept and meet an enforceable HAP emissions limit below the major source threshold prior to three years after the effective date of the rule.

(b) The following emissions units comprise the affected source that is subject to 40 CFR 63, Subpart EEEEE:

(1) Herman 3 pouring;

(2) fugitive emissions from foundry operations.

(c) The definitions of 40 CFR 63, Subpart EEEEE at 40 CFR 63.7765 are incorporated by reference.

(d) Pursuant to 40 CFR 63.7700(a) and 40 CFR 63.7683(b), the Permittee shall comply with the certification requirements in 40 CFR 63.7700(b) or prepare and implement a plan for the selection and inspection of scrap according to the requirements in 40 CFR 63.7700(c) no

later than one year after the effective date of 40 CFR 63, Subpart EEEEE.

D.1.6 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

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

Compliance Determination Requirements

D.1.7 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Within twelve (12) months after commencing operation of the modified Herman 3 cooling line, the Permittee shall perform VOC testing on the Herman 3 pouring, cooling, shakeout, and sand handling operations using methods as approved by the Commissioner, in order to demonstrate compliance with Conditions D.1.1. During the stack test, the Permittee shall monitor and record those parameters required to be measured by Conditions D.1.9 and D.1.17. These tests shall be repeated at least once every 2.5 years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

(b) Within 180 days after commencing operation of the modified Herman 3 cooling line, the Permittee shall perform lead testing on the Herman 3 pouring, cooling, shakeout, and sand handling operations using methods as approved by the Commissioner, in order to demonstrate compliance with Conditions D.1.2. During the stack test, the Permittee shall monitor and record those parameters required to be measured by Conditions D.1.9, D.1.11 and D.1.14. Testing shall be conducted in accordance with Section C - Performance Testing.

(c) Within 180 days after commencing operation of the modified Herman 3 cooling line, the Permittee shall perform PM and PM10 testing on the Herman 3 shakeout, and sand handling operations using methods as approved by the Commissioner, in order to demonstrate compliance with Conditions D.1.2. During the stack test, the Permittee shall monitor and record those parameters required to be measured by Conditions D.1.9, D.1.11 and D.1.14. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing.

D.1.8 Particulate Matter (PM) Controls

(a) In order to comply with D.1.1 and D.1.2, the wet scrubber #4 for PM control shall be in operation and control emissions from the Herman 3 shakeout and sand handling operations at all times when either of these processes is in operation.

(b) In order to comply with D.1.1 and D.1.2, the wet scrubber #1 for PM control shall be in operation at all times and control emissions from the Herman 3 shakeout process at all times when the Herman 3 shakeout process is in operation.

(c) In order to comply with D.1.1 and D.1.2, the scrubber #1 and baghouse #11 for PM control shall be in operation and control emissions from the Herman 3 sand handling process at all times when the Herman 3 sand handling process is in operation.

D.1.9 Continuous Opacity Monitoring [326 IAC 3-5] [326 IAC 2-2-3]

(a) Pursuant to 326 IAC 2-2-3, within eight (8) months after issuance of this PSD permit, but no later than the date of startup of the modified Herman 3 cooling process, a continuous monitoring system shall be installed, calibrated, maintained, and operated for measuring

opacity from the Herman 3 cooling stack. The continuous monitoring systems shall meet the performance specifications of 326 IAC 3-5-2.

(b) Beginning the date of startup of the modified Herman 3 cooling line and ending six months after startup of the Herman 3 cooling line, appropriate response steps shall be taken in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the opacity exceeds 30 percent for three (3) consecutive six (6) minute averaging periods. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

(c) Beginning six months after startup of the Herman 3 cooling line and ending 1 year after startup of the Herman 3 cooling line, appropriate response steps shall be taken in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the opacity exceeds 20 percent for three (3) consecutive six (6) minute averaging periods. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

(d) Beginning 1 year after startup of the Herman 3 cooling line, appropriate response steps shall be taken in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the opacity exceeds 10 percent for three (3) consecutive six (6) minute averaging periods. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

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

D.1.10 Visible Emissions Notations

(a) Visible emission notations of the wet scrubber stack exhausts and the baghouse stack exhaust shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

(e) The Compliance Response Plan for these units 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, Implementation, Records, and Reports, shall be considered a deviation from this permit.

D.1.11 Parametric Monitoring

The Permittee shall record the flow rate and total static pressure drop across the scrubbers used in

conjunction with the Herman 3 shakeout and sand handling operations, at least once per shift when the process is in operation. When for any one reading, the pressure drop across a scrubber is below 8.0 inches of water or a minimum 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 below the above mentioned minimum is not a deviation from this permit. When for any one reading, the flow rate is below 200 gallons per minute or a minimum flow rate 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 flow rate that is below the above mentioned minimum is not a deviation from this permit. 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.

The instruments used for determining the flow rate and pressure drop 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.1.12 Scrubber Inspections

An inspection shall be performed each calender quarter of both scrubbers controlling the Herman 3 shakeout and sand handling process. Inspections required by this condition shall not be performed in consecutive months. All defective scrubber parts shall be replaced.

D.1.13 Scrubber Failure

In the event that scrubber failure has been observed the failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

D.1.14 Baghouse Parametric Monitoring

The Permittee shall record the total static pressure drop across the baghouse #11 used in conjunction with the Herman 3 sand handling process, at least once per shift when the sand handling process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 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, Implementation, Records, and Reports, 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.1.15 Baghouse Inspections

An inspection shall be performed each calender quarter of all bags controlling the facilities listed in this section when venting to the atmosphere. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

D.1.16 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 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. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

D.1.17 Parametric Monitoring of Sonoperoxone^{R} System or Equivalent System

(a) Upon commencing initial operation of the Sonoperoxone^{R} system or equivalent system, the Permittee shall monitor and record the ultra-sonic power of the Sonoperoxone^{R} system or equivalent system used in conjunction with the Herman 3 line, at least once per shift when the Herman 3 line is in operation. When for any one reading, the ultra-sonic power is less than 1500 W or a minimum 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. An ultra-sonic power reading that is below the above mentioned minimum is not a deviation from this permit. 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.

(b) Upon commencing initial operation of the Sonoperoxone^{R} system or equivalent system, the Permittee shall monitor and record the ozone generator plasma voltage of the Sonoperoxone^{R} system or equivalent system used in conjunction with the Herman 3 line, at least once per shift when the Herman 3 line is in operation. When for any one reading, the ozone generator plasma voltage is less than 2700 V or a minimum 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. An ozone generator plasma voltage reading that is below the above mentioned minimum is not a deviation from this permit. 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.

(c) Upon commencing initial operation of the Sonoperoxone^{R} system or equivalent system, the Permittee shall monitor and record the hydrogen peroxide usage of the Sonoperoxone^{R} system or equivalent system used in conjunction with the Herman 3 line, at least once per shift when the Herman 3 line is in operation. When for any one reading, the hydrogen peroxide is less than 1 gallon per hour of muller operation, or a minimum 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 peroxide usage reading that is below the above mentioned minimum is not a deviation from this permit. 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.

The instruments used for determining the ultra-sonic power, the ozone generator plasma voltage and the hydrogen peroxide usage 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.

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

D.1.18 Record Keeping Requirements

(a) To document compliance with Condition D.1.10, the Permittee shall maintain records of visible emission notations of each of the scrubber stack exhausts and the baghouse stack exhaust once per shift.

(b) To document compliance with Condition D.1.11, the Permittee shall maintain records of the pressure drop readings and flow rate readings of the scrubbers.

(c) To document compliance with Condition D.1.12, the Permittee shall maintain records of the results of the inspections required under Condition D.1.12 and the types and numbers of any parts replaced.

(d) To document compliance with Condition D.1.14, the Permittee shall maintain records of the pressure drop across the baghouses once per shift.

(e) To document compliance with Condition D.1.15, the Permittee shall maintain records of the results of the inspections required under Condition D.1.15.

(f) To document compliance with Condition D.1.17, the Permittee shall maintain records of the ultra-sonic power, the ozone generator plasma voltage, and the hydrogen peroxide usage of the Sonoperoxone^{R} system.

(g) To document compliance with Conditions D.1.1 and D.1.2, records shall be kept of the metal and sand throughputs to the Herman 3 line.

(h) To document compliance with Conditions D.1.9 and Section C - Opacity, the Permittee shall maintain records of opacity from the continuous opacity monitor on the Herman 3 cooling stack, including raw data and supporting information, for a minimum of five (5) years.

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

D.1.19 Reporting Requirements

(a) A quarterly summary of the information to document compliance with Conditions D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, using the reporting forms located at the end of this permit, or the equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the “responsible official” as defined by 326 IAC 2-7-1(34).

(b) A quarterly summary of excess opacity emissions, as defined in 326 IAC 3-5-7, from the continuous monitoring system, shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, within thirty (30) days after the end of the quarter being reported.

D.1.20 National Emissions Standards for Hazardous Air Pollutants for Iron and Steel Foundries - Reporting Requirements [40 CFR 63, Subpart EEEEE]

(a) To comply with Condition D.1.4 and D.1.5, the Permittee shall submit:

(1) An Initial Notification containing the information specified in 40 CFR 63.9(b)(2) no later than 120 days after the effective date of 40 CFR 63, Subpart EEEEE.

(2) A Notification of Compliance Status containing the information required by 40 CFR 63.9(h) in accordance with 40 CFR 63.7750(e). The Notification of Compliance Status must be submitted:

(A) Before the close of business on the 30th calendar day following completion of the initial compliance demonstration for each initial compliance demonstration that does not include a performance test; and

(B) Before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in 40 CFR 63.10(d)(2) for each initial compliance demonstration that does include a performance test.

(3) If required to conduct a performance test, a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by 40 CFR 63.7(b)(1) and 40 CFR 63.7750(d).

(4) If required to use a continuous monitoring system (CMS), notifications, if required, as specified in 40 CFR 63.9(g), by the date of submission of the notification of intent to conduct a performance test.

(5) If required to conduct opacity or visible emissions observations, the anticipated date for conducting the opacity or visible emission observations specified in 40 CFR 63.6(h)(5) in accordance with the appropriate schedule specified in 40 CFR 63.9(f) as required by 40 CFR 63.7750(a).

(b) The notifications required by paragraph (a) 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

and

United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

The notifications require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

D.1.21 Requirement to Submit a Significant Permit Modification Application [326 IAC 2-7-12] [326 IAC 2-7-5]

The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information from the notification of compliance status in the Title V permit.

(a) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Title V permit the applicable requirements of 40 CFR 63, Subpart EEEEE, a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.

(b) The significant permit modification application shall be submitted no later than the date that the notification of compliance status is due.

(c) The significant permit modification application 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

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY

PART 70 SOURCE MODIFICATION CERTIFICATION

Source Name: Dalton Corporation Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Mailing Address: P.O. Box 1388, Warsaw, Indiana 46580
Source Modification No.: 085-18009-00003

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

Please check what document is being certified:

? 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 DATA SECTION

Part 70 Source Modification Quarterly Report

Source Name: Dalton Corporation Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Mailing Address: P.O. Box 1388, Warsaw, Indiana 46580
Source Modification No.: 085-18009-00003
Facility: Herman 3 line
Parameter: Metal and sand throughputs
Limits: Metal: 90,578 tons per 12 consecutive month period
Sand: 543,470 tons per 12 consecutive month period

YEAR: _____

Month	Material	Column 1	Column 2	Column 1 + Column 2
		This Month	Previous 11 Months	12 Month Total
Month 1	metal			
	sand			
Month 2	metal			
	sand			
Month 3	metal			
	sand			

? No deviation occurred in this quarter.

? Deviation/s occurred in this quarter.
Deviation has been reported on: _____

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

Attach a signed certification to complete this report.

Mail to: Permit Administration & Development Section
Office Of Air Quality
100 North Senate Avenue
P. O. Box 6015
Indianapolis, Indiana 46206-6015

Dalton Corporation Warsaw Manufacturing Facility
1900 E. Jefferson Street
P.O. Box 1388
Warsaw, Indiana 46580

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____,I have personal knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____ .
(Company Name) (Company Name)

4. I hereby certify that Dalton Corporation, Warsaw Manufacturing Facility, 1900 E. Jefferson Street, Warsaw, Indiana, 46580, has constructed the Herman 3 line in conformity with the requirements and intent of the construction permit application received by the Office of Air Quality on August 4, 2003 and as permitted pursuant to Source Modification No. 085–18009-00003 issued on _____

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

_____
Signature

_____
Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 20 _____ .

My Commission expires: _____

_____
Signature

_____
Name (typed or printed)

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the
Technical Support Document for a PSD Significant Source Modification
to a Part 70 Operating Permit

Source Name:	Dalton Corporation, Warsaw Manufacturing Facility
Source Location:	1900 E. Jefferson Street, Warsaw, Indiana 46580
County:	Kosciusko
SIC Code:	3321
Operation Permit No.:	T085-6708-00003
Operation Permit Issuance Date:	not yet issued
PSD Significant Source Modification No.:	085-18009-00003
Permit Reviewer:	Nisha Sizemore

On October 23, 2003, the Office of Air Quality (OAQ) had a notice published in the Times Union, Warsaw, Indiana, stating that Dalton Corporation, Warsaw Manufacturing Facility had applied for a significant source modification to a Part 70 Operating Permit to modify the Herman 3 cooling line. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On November 21, 2003, Barnes & Thornburg, on behalf of ThyssenKrupp Waupaca, Inc., submitted comments on the proposed significant source modification to the Part 70 permit. The summary of the comments and IDEM's responses is as follows:

Comment #1

General Comment:

We disagree that advanced oxidation ("AO") represents BACT for foundry operations. The inability to estimate emission reductions, if any, or determine its cost effectiveness, does not allow AO to be a technically or economically feasible BACT alternative. IDEM's BACT determination is inconsistent with prior BACT guidance and policy and sets an unacceptable precedent for future foundry BACT determinations. We request that IDEM revise the BACT determination to eliminate AO as a consideration and to revise the significant source modification accordingly.

Response #1

Advanced oxidation represents BACT for the Herman 3 cooling operation. IDEM has estimated emission reductions, and a detailed cost effectiveness analysis is now included below in response to comment #3. IDEM's BACT for the Herman 3 cooling operation is consistent with BACT guidance and policy, as well as relevant decisions by the Environmental Appeals Board (EAB). More detailed information is included below in response to comments 2 through 5.

Comment #2

COMMENTS ON TECHNICAL FEASIBILITY

IDEM acknowledged that the effectiveness of the Sonoperoxone system is variable and cannot be estimated. In its BACT analysis, IDEM states:

> "Dalton Foundry has submitted information demonstrating that VOC reductions from the use of advanced oxidation systems are highly variable and difficult to predict. As a result, IDEM has included language in the permit that allows the VOC limit on the Herman 3 cooling process to be adjusted up or down after the initial stack test results have been reviewed and approved by IDEM."

IDEM has proposed emission limitations based on the use of the Sonoperoxone system. However, it does not know if these limitations will be achieved.

Control methods considered BACT must have a predictable level of emission reductions. Without a guaranteed level of performance, it is not possible to either establish achievable emission limitations, or determine the cost effectiveness. These are two steps necessary in a BACT analysis to assure the use of the most effective control method and eliminate economically infeasible options. If the benefits of the Sonoperoxone system are not known, IDEM cannot evaluate whether it represents BACT.
IDEM will typically not issue a construction permit unless compliance with emission limitations has been demonstrated. Use of a control technology with variable performance, which may or may not be adequate for compliance, would typically not be approved. It is not clear why IDEM will accept the Sonoperoxone system as a control option when it has no idea what VOC emission reductions will occur. The draft permit states that the emission limitation can be raised or lowered based on the compliance test results. Therefore, IDEM appears willing to accept 0% reduction in VOC emissions.

Response #2

The commenter appears to be making a claim that a performance guarantee is necessary in order for an emission reduction technique to be considered BACT. IDEM disagrees with this claim. EPA's New Source Review Workshop Manual at B-20 states:

> Vendor guarantees may provide an indication of commercial availability and the technical feasibility of a control technique and could contribute to a determination of technical feasibility or technical infeasibility, depending on circumstances. However, EPA does not consider a vendor guarantee alone to be sufficient justification that a control option will work. **Conversely, lack of a vendor guarantee by itself does not present sufficient justification that a control option or emissions limit is technically infeasible** (emphasis added).

Even though IDEM does not believe that a vendor guarantee is a prerequisite for requiring a specific emissions reduction technique as BACT, the fact is that Dalton has obtained a performance guarantee from the vendor of the advanced oxidation system. The vendor guarantees at least a 20% reduction in VOC emissions as well as a 20% reduction in bond usage. The emission limit in draft permit was based on a 10% reduction in VOC emissions from the Herman 3 cooling process, but has now been revised based on the vendor guarantee of a 20% VOC reduction.

Since a vendor guarantee alone does not assure compliance with an emission limitation, and IDEM has not identified any other similar facilities that have been required to install an advanced oxidation system as BACT, IDEM also included a re-opener clause in the permit. This allows IDEM to re-establish the limit (higher or lower) based on the results of the stack test. The practice of using a re-opener clause in such situations, has been upheld by the EAB. The commenter's suggestion to disallow the advanced oxidation system as BACT since the level of performance is uncertain, would be in direct conflict with EAB's prior determination in *In re AES Puerto Rico L.P.* (EAB 1999), where the EAB upheld the use of adjustable limits where the permitting authority had the intention of adjusting the limits based on subsequent stack test results. The EAB stated that since the permitting authority was faced with some uncertainty as to what emission limit was achievable, the use of an adjustable limit was a reasonable approach. The EAB also referred to a previous case *In re Hadson Power 14,* 4 E.A.D. 258 (EAB 1992) where the Board denied review of an emission limit that involved the first time a control technology was applied to a particular type of coal-fired boiler. The petitioner had objected to the NOx limit being too high, but the permitting authority had included a permit provision that allowed the NOx limit to be adjusted downward after the facility commenced operation. The Hadson Power approach began with a high emission limit and included the potential for

downward adjustment. The AES Puerto Rico approach began with a low emission limit and allowed for upward adjustments. Both cases involved a situation where the permitting authority was faced with some uncertainty as to what emission limit was achievable. In both cases, the use of adjustable limits was upheld.

Comment #3

COMMENTS ON COST EFFECTIVENESS

IDEM did not estimate the cost effectiveness for the Sonoperoxone system since Dalton had voluntarily chosen to install the system. However, IDEM chose to estimate the cost effectiveness of the low VOC core resin even though this option was also voluntarily included in the project by Dalton. Just because a control system is voluntarily installed as part of a project, does not result in the control system representing BACT.

Had IDEM estimated the cost effectiveness of the Sonoperoxone system, it would find that low emission reductions would result in high estimates of cost effectiveness which would not be representative of BACT. Since the emission reductions of the Sonoperoxone system are unknown, it may in fact be economically infeasible, similar to the incineration option.

To demonstrate this point, the cost effectiveness of the Sonoperoxone system was estimated using the following assumptions:

- Uncontrolled emissions of 0.45 lbs/ton and 20.38 TPY;
- IDEM acceptable cost effectiveness level of $8,000 per ton or lower; and,
- Cost estimation procedures in the U. S. EPA Air Pollution Control Cost Manual.

According to the Air Pollution Control Cost Manual, there are fixed costs associated with an air pollution control system including operation and maintenance labor, overhead, administration, insurance, and taxes. Based solely on these fixed costs, and assuming the installed costs for the Sonoperoxone system are zero, its emission reductions must be at least 35% before it achieves a cost effectiveness of $8,000 or lower. If the threshold for economically feasibility were reduced to $5,000 per ton, a zero installed cost would require at least 55% reduction to be considered feasible.

IDEM notes that the demonstrated effectiveness of the Sonoperoxone system ranges from 20 to 75% and Dalton had estimated a 40% reduction may occur. Based on these efficiencies, the Sonoperoxone system may in fact generate insufficient emission reductions to be considered economically feasible. The cost effectiveness is not known because IDEM cannot accurately estimate the emission reductions.

Response #3

IDEM disagrees with the commenter's rough estimate of the cost effectiveness of the advanced oxidation system. First, IDEM does not have an acceptable cost effectiveness level of $8,000 per ton or lower. The determination of whether an emission reduction technique is economically feasible, is determined by evaluating the total costs, on average cost per ton of pollutant reduced, and determining whether that cost is within the range of total costs being borne by other similar sources in achieving emission reductions.

Second, and more importantly, the commenter's estimated cost effectiveness analysis does not take into account any of the cost savings associated with the use of an advanced oxidation system, specifically the cost savings gained by reducing bond usage. The vendor has guaranteed a 20% reduction in bond usage. This cost savings must be taken into account when determining the cost effectiveness of the advanced oxidation system.

As explained in response to comment #2, Dalton has obtained a performance guarantee from the vendor of the advanced oxidation system. The vendor guarantees at least a 20% reduction in VOC emissions, as

well as a 20% reduction in bond usage. Data on the use of advanced oxidation indicate that the range of VOC reduction is between 20 and 70 percent; therefore, IDEM believes that a cost effectiveness analysis using only a 20% reduction in VOC emissions, will provide a conservatively high cost effectiveness.

The cost effectiveness analysis is summarized below.

Description	Notes	Cost
Purchase Equipment and Installation Costs		$188,000
Operating Labor	@1/2 hr/shift and $20.93/hr for 224 hrs	$4,688
Operating Supervisor	15% of operating labor	$703
Maintenance Labor	@1/2 hr/shift and $26.73/hr for 224 hrs	$5,988
Material	100% of maintenance labor	$5,988
Electricity	(28kwh)(3584 hr/yr)($0.0365/kwh)	$3,663
Overhead	@60% of operating labor, supervisor, maintenance labor and materials	$10,415
Administration	@2% of purchase cost	$3,760
Property Taxes	@1% of purchase cost	$1,880
Insurance	@1% of purchase cost	$1,880
Capital Recovery	@10% over 10 years	$26,846
Subtotal		$65,811
At 20% bond reduction, cost savings		-$89,000
Total		-$23,189
Emission Reduction	At 20% efficiency	4.08 tpy
Cost effectiveness		-$5,684/ton

As shown in the table above, the savings resulting from reduced bond usage is more than enough for the foundry to recovery the cost of installing and operating the advanced oxidation system. Therefore, the cost effectiveness of the system is negative, which indicates that the system is certainly cost effective.

Comment #4

COMMENTS ON PRIOR BACT DETERMINATIONS

IDEM concluded that Dalton Foundry's proposed VOC BACT limits for the proposed Herman 3 line represent the most stringent limits found for any similar operation. It is not possible for IDEM to make this

conclusion. The variability in foundry raw materials, production methods and ventilation systems, makes it difficult if not impossible to compare emission limitations between foundries. VOC emissions vary with changes in these foundry-specific factors, resulting in an apples to oranges comparison. Side by side production lines at the same foundry may generate different VOC emissions as the size, weight and shape of castings vary, as well as changes in the type, weight and composition of the core sand. The lbs/ton emission factor achieved at one foundry is not applicable to another foundry. IDEM cannot conclude that Dalton represents the most stringent limits as these are unique to the conditions and operations used at Dalton.

Response #4

IDEM realizes that different foundries make different types of castings, and that several factors can influence VOC emissions from a mold line. However, the VOC BACT limits for Dalton's Herman 3 line are lower than those applied to any other foundry that IDEM identified; therefore, it is clear that these limits represent BACT for the Herman 3 line. If Dalton had proposed to comply with limits that were higher than those consistently achieved at another foundry, then IDEM would compare the similarities and differences between Dalton's mold line and the other foundry mold line, to determine if Dalton could reasonably be expected to achieve the same limits achieved by the other foundry.

Comment #5

COMMENTS ON COMPLIANCE WITH BACT REGULATIONS AND POLICY

The Herman 3 Project BACT analysis will establish a presumption that will not only affect Waupaca but also all other foundries in Indiana that propose to increase their mold making capacity. Specifically, the guidance used by IDEM in evaluating the Herman 3 Project BACT determination states, in relevant parts:

> In the absence of unusual circumstances, the presumption is that sources within the same category are similar in nature, and that cost and other impacts that have been borne by one source of a given source category may be borne by another source of the same source category.

Draft New Source Review Workshop Manual, October 1990, Page B.29

Under this guidance, any Indiana foundry proposing to increase its mold making capacity will potentially bear the cost of installing and operating AO, even though the Herman 3 Project BACT analysis does not identify the emissions reduction from the use of AO because they cannot be predicted with any degree of certainty. Moreover, the cost per ton to remove the VOCs has not been calculated apparently because of the inability of IDEM to determine the emissions reduction that would result from the use of AO. Under the applicable guidance, the current Herman 3 Project BACT analysis means any other foundry would be required to use AO even if the cost per ton of pollutant removed exceeds the cost found to be unacceptable in other BACT determinations.

Secondly, as described above, IDEM's Herman 3 Project BACT analysis does not meet the basic requirements of the implementing regulations, 329 IAC 2-2 nor does it comport with the BACT analysis procedure outlined in the U.S. EPA's 1990 Draft New Source Review Workshop Manual. The term "Best Available Control Technology" is defined in Indiana Regulations as:

> … an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each pollutant subject to regulation under the provisions of the CAA, which would be emitted from any proposed major stationary source or major modification, which the commissioner, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutants. In no event shall application of best available control technology result in emissions of any pollutant which would

> exceed the emissions allowed by any applicable standard under 40 CFR Part 60 and 40 CFR Part 61. If the commissioner determines that technological or economic limitations on the application of measurement methodology to a particular emissions unit would make the imposition of an emissions standard not feasible, a design, equipment, work practice, operation standard, or combination thereof may be prescribed instead to satisfy the requirements for the application of best available control technology. Such standard shall, to the degree possible, set forth the emissions reduction achievable by implementation of such design, equipment, work practice or operation and shall provide for compliance by means which achieve equivalent results.

326 IAC 2-2-1(a)(h)

IDEM's Herman 3 Project BACT analysis fails in at least two ways to meet the definition of BACT. First, as stated above, "BACT" is an emissions limitation. However, the Herman 3 BACT analysis states with regards to emissions limitation achieved by AO that "VOC reductions from the use of advance oxidation systems are highly variable and difficult to predict." (See Appendix B, BACT analysis, page 6 of 7) Therefore, AO is not an emissions limitation based on the "maximum degree of reduction" because neither IDEM nor the Permittee the can predict the degree of emissions reduction achievable. Secondly, the Commissioner has not determined that "technological or economic limitations on the applications of measurement methodology to particular emissions unit would make the imposition of emission standards not feasible." There is no question about whether the VOC reductions are measurable. The question is the predictability of the VOC reductions achieved by the use of AO. Thus AO would not qualify as BACT under the second "prong" of the definition of BACT.

AO is not appropriate for consideration as BACT because sources cannot predict in advance the degree of emissions reduction and therefore cannot make determinations on all the impacts as required by Indiana's regulations for a BACT determination. AO systems are more appropriately considered under situations where foundries may wish to implement additional control by re-designing their manufacturing process and propose to install AO, for example, as part of a supplemental environmental project.

Response #5

The BACT requirements for Dalton's Herman 3 line do meet the definition of BACT. First, a VOC emission limit has been established as BACT. The VOC emission limit established is based on the manufacturer's guarantee of at least a 20% emission reduction. Additionally, this level of emission reduction has been achieved at other foundries that have installed advanced oxidation systems. IDEM has stated that advanced oxidation systems are capable of achieving a VOC emission reduction in the range of 20 to 70 percent. The exact amount of the reduction within that range is difficult to predict from one foundry operation to another; however, a minimum emission reduction of 20% is guaranteed by the vendor and has been consistently achieved at other foundries using advanced oxidation.

The commenter's second point is that the BACT for Dalton's Herman 3 line does not meet the definition of BACT because IDEM has failed to demonstrate that advanced oxidation is economically feasible. As shown in response to comment #4, IDEM has performed a cost analysis based on the minimum control efficiency guaranteed (20%) and the minimum bond reduction guaranteed (20%). The cost analysis shows that advanced oxidation will result in a cost savings for Dalton Foundry, and is therefore, clearly economically feasible.

On November 20, 2003, Dalton Corporation, Warsaw Manufacturing Facility submitted comments on the proposed significant source modification to the Part 70 permit. The summary of the comments and IDEM's responses is as follows:

Comment #1

Condition C.8(a)

This provision requires stack testing on new emission units to be conducted no later than 180 days after initial startup; however, D.1.7(a) of this permit allows compliance testing on the cooling line within one year from commencing operation. The language in C.8(a) should be changed as follows: "Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, or as specified in Section D of this approval."

Response #1

IDEM agrees. The revisions are shown below.

C.8 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

(a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, ~~if~~ **or as** 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 approval, 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.

Comment #2

D.(c) & (d)
Please change the identification of scrubbers D and E, and baghouse W to scrubbers #1 and #4 and baghouse #11. Please change stacks D, E, & W to #1, #4, & #11. These changes reflect the changes requested in the second administrative amendment of Significant Source Modification 085-14027-00003.

Response #2

The requested changes have been made throughout the permit.

Comment #3

Condition D.1(a)-(d)
The description should be revised to omit "prior to 1977 and modified" in order to be consistent with the description in A.2.(a) -(d) which is correct.

Response #3

IDEM has revised the descriptions as shown below.

Herman 3 mold line

(a) one (1) Herman 3 pouring process, constructed ~~prior to 1977 and modified~~ in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(b) one (1) Herman 3 castings cooling process, constructed ~~prior to 1977 and modified~~ in 1991 **and to be modified in 2003**, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(c) one (1) Herman 3 shakeout process, constructed ~~prior to 1977 and modified~~ in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions controlled by scrubber #4 and baghouse #11 and exhausting to stacks #4 and #11 respectively;

(d) Herman 3 sand handling operations constructed ~~prior to 1977 and modified~~ in 1991, with a maximum capacity of 150 tons of sand per hour, with emissions controlled by scrubbers #1 and #4, and baghouse #11, and exhausting to stacks 1, 4, and 11 respectively.

Comment #4

Condition D.1.(d)
Permit No. 085-14027-00003, condition D.4.1(i) set a VOC emission limit from the Herman III cooling process of 0.687 pounds per ton of metal. This permit sets a VOC limit of 0.41. The limit in this permit is the reduction of VOCs that Dalton hopes to at least attain (and more likely will be eclipsed) with the operation of the Sonoperoxone system and after optimization of the sand system which is estimated to take approximately one year; that is the purpose of the re-opener clause. Dalton may not be attaining this emission limit upon start up and should not be held to this limit until the required compliance testing on the Herman III cooling set in D.1.7(a).

Response #4

IDEM realizes that some period of time is necessary to optimize the system before compliance can be demonstrated. IDEM has taken this into account in the permit conditions. Condition D.1.7 allows twelve (12) months of operation of the advanced oxidation system before a compliance test is required. Additionally, Condition D.1.9 allows for a gradual reduction in opacity, based on the need to optimize the system.

Comment #5

Condition D.1.6
In accordance with Section C.2 of this permit a Preventive Maintenance Plan must be developed meeting the requirements of 326 IAC 1-6-3 for scrubbers #1 and #4, baghouse #11 and the Sonoperoxone System proposed for emission control the H3 line.

Response #5

The Preventive Maintenance Plan requirement must be included in every permit pursuant to 326 IAC 2-7-5 (13). This rule refers back to the Preventive Maintenance Plan requirement found in 326 IAC 1-6-3. This Preventive Maintenance Plan rule sets out the requirements for:

(1) Identification of the individuals responsible for inspecting, maintaining and repairing the emission control equipment (326 IAC 1-6-3 (a)(1)),

(2) The description of the items or conditions in the facility that will be inspected and the inspection schedule for said items or conditions (326 IAC 1-6-3(a)(2)), and

(3) The identification and quantification of the replacement parts for the facility which the Permittee will maintain in inventory for quick replacement (326 IAC 1-6-3 (a) (2)).

Pursuant to 326 IAC 1-6-1 (Applicability), 326 IAC 1-6-3 applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-1-2 and 326 IAC 2-1-4. Therefore, it is clear from the structure of 326 IAC 1-6-3 that the PMP requirement affects the entirety of the applicable facilities. Only 326 IAC 1-6-3 (a)(1) is limited, in that it requires identification of the personnel in charge of only the emission control equipment, and not any other facility equipment. In additional support of this position, 326 IAC 1-6-5 provides that the commissioner may require changes in the maintenance plan to reduce excessive malfunctions in any control device or combustion or process equipment. Therefore, it is also clear from the structure of 326 IAC 1-6-5 that the PMP requirement affects the emission unit as well as the control device.

Comment #6

COMMENTS ON TECHNICAL SUPPORT DOCUMENT

PAGE	COMMENTS
2	Dalton 's Title V permit application was submitted in August,1996.
2	Dalton does not agree with IDEM's calculations that demonstrate that VOC emissions exceeded the threshold for PSD. Dalton agreed to submit a PSD permit for the Herman III to resolve past problems with the prior permit.
2	The NOV referred to does not contain the allegations set forth herein.
13	Section (m)'s timeframes for stack testing do not agree with the timeframes in the permit.
App. A, p.1	The title of the table listing the emission factors for the Herman 3 molding line states the stack test results are from testing conducted in June 2001. However, the test results for the cooling line process reflects the average emission rate of the three test runs conducted in May 2003. Dalton does not have the certified results from the state, but the report of the stack test results submitted to the state in June 2003 listed emission rates of 4.63, 14.21 & 9.74 pounds per hour during the respective test runs.
App. B, p.2	Dalton submitted its Title V permit application in August, 1996.
App. B, p.2	Dalton submitted a BACT review on the Herman III in 2000 and in 2003.

Response #6

IDEM agrees that the date of submittal of the Part 70 application was incorrectly listed in the TSD and in Appendix B of the TSD. IDEM received Dalton’s Part 70 permit application on September 26, 1996.

IDEM's calculations that demonstrate that VOC emissions exceeded the threshold for PSD are based on the following:

- emission factors derived from site specific stack testing on the Herman 3 line;
- production figures from Dalton’s own emission statements;
- contemporaneous decreases derived from Dalton’s own production records and stack testing results.

Therefore, IDEM stands by it’s calculations which indicate past noncompliance with PSD.

IDEM realizes that the NOV does not specifically cite to PSD violations for the Herman 3 mold line. The Office of Enforcement will determine the appropriate actions to be taken.

IDEM acknowledges that the times frames listed in the TSD for stack testing were incorrect. The time frames listed in the permit are correct.

IDEM has added a reference to the May 2003 stack test to page 1 of Appendix A.

IDEM acknowledges that Dalton submitted a partial BACT analysis in 2000, and some of the information in that 2000 submittal was used in the evaluation of this permit.

On November 24, 2003, US EPA submitted comments on the proposed significant source modification to the Part 70 permit. The summary of the comments and IDEM's responses is as follows:

Comment #1

Condition D.1.7(c)

It is suggested that the testing requirements specify that PM/PM10 includes both filterable and condensible PM.

Response #1

IDEM agrees. Condition D.1.7(c) has been revised as shown below.

D.1.7 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(c) Within 180 days after commencing operation of the modified Herman 3 cooling line, the Permittee shall perform PM and PM10 testing on the Herman 3 shakeout, and sand handling operations using methods as approved by the Commissioner, in order to demonstrate compliance with Conditions D.1.2. During the stack test, the Permittee shall monitor and record those parameters required to be measured by Conditions D.1.9, D.1.11 and D.1.14. These tests shall be repeated at least once every five (5) years from the date of this valid compliance demonstration. Testing shall be conducted in accordance with Section C - Performance Testing. **PM10 includes filterable and condensible PM10.**

Comment #2

Please include a citation for Condition D.1.8.

Response #2

The requirement to operate the control devices is necessary in order for the facilities to achieve compliance with Conditions D.1.2 and D.1.3. The condition has been revised to indicate this.

D.1.8 Particulate Matter (PM) Controls

(a) **In order to comply with D.1.1 and D.1.2, the** ~~The~~ wet scrubber #4 for PM control shall be in operation and control emissions from the Herman 3 shakeout and sand handling operations at all times when either of these processes is in operation.

(b) **In order to comply with D.1.1 and D.1.2, the** ~~The~~ wet scrubber #1 for PM control shall be in operation at all times and control emissions from the Herman 3 shakeout process at all times when the Herman 3 shakeout process is in operation.

(c) **In order to comply with D.1.1 and D.1.2, the** ~~The~~ scrubber #1 and baghouse #11 for PM control shall be in operation and control emissions from the Herman 3 sand handling process at all times when the Herman 3 sand handling process is in operation.

Appendix B
BACT analysis

Source Background and Description

Source Name:	**Dalton Corporation, Warsaw Manufacturing Facility**
Source Location:	**1900 E. Jefferson Street, Warsaw, Indiana 46580**
County:	**Kosciusko**
SIC Code:	**3321**
Operation Permit No.:	**T085-6708-00003**
Operation Permit Issuance Date:	**not yet issued**
PSD Significant Source Modification No.:	**085-18009-00003**
Permit Reviewer:	**Nisha Sizemore**

VOC BACT for Herman 3 mold line

History

On August 4, 2003, Dalton Corporation, Warsaw Manufacturing Facility submitted an application to the OAQ requesting to lengthen the Herman 3 cooling line. Dalton Corporation, Warsaw Manufacturing Facility submitted a Part 70 permit application on December 14, 1998. The Part 70 application is still under review.

The Herman 3 mold line was originally constructed in 1991. Dalton Corporation obtained a permit for the Herman 3 mold line when it was originally constructed; however, the permit did not address VOC emissions from the mold line. Dalton Corporation conducted stack testing for VOC emissions from the Herman 3 line in June 2001 and June 2003. The test results, combined with Dalton Corporation's production records, indicate that actual VOC emissions from the Herman 3 line were above the PSD significance thresholds in 1998. As a result, IDEM requested that Dalton Corporation submit a PSD application for VOC emissions for entire Herman 3 line. Dalton Corporation has complied with the request by submitting a PSD application for the entire Herman 3 line as part of this application to modify the existing Herman 3 cooling process. This permit serves to bring the entire Herman 3 line into compliance with PSD, as well as to provide Dalton Corporation with the approval to modify the existing Herman 3 cooling process.

BACT General Discussion

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ), has performed the following federal BACT review for the Herman 3 mold line operations which are owned and operated by Dalton Foundry. The source is located in Kosciusko County which is designated as attainment for all criteria pollutants. The PSD Program requires a BACT review and an air quality analysis. BACT is an emission limitation based on the maximum degree of reduction of each pollutant subject to the PSD requirements. IDEM conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;
(3) Rank remaining control technologies by control effectiveness;
(4) Evaluate the most effective controls and document the results; and
(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft USEPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts on the source. These reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause or contribute to air pollution thereby protecting public health and the environment.

The following BACT determinations are based on the following information:

(1) The BACT analysis submitted by Dalton Foundry on January 7, 1998;
(2) Information IDEM gained from other regulatory agencies;
(3) Other IDEM permits and permits from other regulatory agencies; and
(4) The EPA RACT/BACT/LAER (RBLC) Clearinghouse.

Control Options

The following control methods and pollution prevention techniques were evaluated for the removal of VOC/HAP emissions:

(1) thermal oxidation
(2) advanced oxidation (Sonoperoxone^{R} system or equivalent system)
(3) alternate binder systems in the core manufacturing process
(4) mold vent off-gas ignition

Technical Feasibility

Thermal Oxidizers

A thermal oxidizer would control VOC emissions by using incineration equipment to raise the exhaust gas temperature to the combustion temperature of VOC. For the pouring and cooling operations, baghouses would be required to pre-clean the exhaust gases in advance of the incineration control equipment. The incinerator could consist of a regenerative, recuperative, or catalytic design. However, the recuperative design is less sensitive to residual contaminants leaving the baghouse system than the regenerative or catalytic designs. Thermal oxidation is considered a technically feasible control option for this process.

Advanced Oxidation

Advanced oxidation (Sonoperoxone^{R} system or equivalent system) is an approach to reducing VOC emissions at the mold line by reducing the VOC emissions generated by the green sand molds. The basic Sonoperoxone^{R} system works by treating the water entering a foundry's sand mullers and coolers. Sonoperoxone^{R} treatment consists of ozone addition (<10 ppm), hydrogen peroxide addition (<100 ppm), and sonication. By applying these technologies, the water fed to the mullers and coolers becomes laden with advanced oxidants that will degrade/destroy VOCs. Sonoperoxone^{R} systems have been installed at several foundries and these foundries (following

sand system stabilization) have reported reductions in VOCs ranging from 20 to 75 percent. The amount of reduction is dependent upon several factors, including core loading, coal/clay composition, and binder systems. Dalton Foundry already operates a Sonoperoxone^{R} system on another existing mold line, the Herman 2 line, at it's Warsaw Plant. The use of the Sonoperoxone^{R} system is considered to be technically feasible with the Herman 3 line.

Alternate Binder Systems in the Core Manufacturing Process

VOC emissions are generated at the mold line when molten metal is poured into the molds, causing partial evaporation of the binder system used to make the cores. Dalton Foundry evaluated the feasibility of changing binder systems to reduce the emissions at the mold line. Dalton Foundry was able to identify at least one binder system with a lower potential to emit VOC than the one they are currently using. This alternate binder system is considered technically feasible.

Mold Vent-Off Gas Ignition

Mold vent-off gas ignition is a requirement in the final MACT rule for iron and steel foundries. The molds on the Herman 3 line automatically ignite during the pouring process; therefore, this option is technically feasible and will be considered part of the BACT requirement for this line.

Ranking of Technically Feasible Control Options

(1) thermal oxidation (98 to 99% VOC control)
(2) advanced oxidation (Sonoperoxone^{R} system or equivalent system) (20 to 75% VOC reduction)
(3) alternate binder systems in the core manufacturing process (approximately 5% VOC reduction)
(4) mold vent off-gas ignition

It should be noted that it would be possible to use several of these options in combination to achieve a more effective control scheme. Where appropriate, such combinations have been evaluated and are discussed in the following paragraphs.

Economic Analysis

Thermal Oxidizer

Dalton Foundry completed economic analyses for the use of a recuperative thermal oxidizer with control efficiencies ranging from 98 to 99% on the Herman 3 line. Dalton Foundry completed various economic analyses to determine the most cost effective way to use oxidation to control part or all of the Herman 3 line. The results of the cost analyses are shown in the table below.

	pouring operation	cooling operation	shakeout operation	Entire Herman 3 line
Total Annualized Costs[1]	$989,189	$522,765	$1,231,373	$3,776,259
Potential Uncontrolled VOC Emissions (tons/year)	7.37	20.38	5.21	64.21
Control Efficiency (%)	99.0	98.0	99.0	99.0
VOC destroyed (tons/year)	7.30	19.97	5.16	63.57
Cost Effectiveness ($/ton VOC removed)	$135,505/ton	$26,178/ton	$238,638/ton	$59,403/ton

These costs are not considered to be economically feasible for BACT for VOC emissions from this type of operation.

Advanced Oxidation (Sonoperoxone^{R} system or equivalent system)

Dalton Foundry has proposed the use of the Sonoperoxone^{R} system or equivalent system to achieve a 20% VOC reduction as BACT for the Herman 3 cooling process. The vendor guarantees a 20% VOC reduction and a 20% reduction in bond usage. Based on these factors, a cost analysis was performed and is summarized below.

[1] For pouring and cooling, the total annualized cost includes the cost of installing and operating a baghouse, which would be necessary in order for the RTO to operate effectively.

Description	Notes	Cost
Purchase Equipment and Installation Costs		$188,000
Operating Labor	@1/2 hr/shift and $20.93/hr for 224 hrs	$4,688
Operating Supervisor	15% of operating labor	$703
Maintenance Labor	@1/2 hr/shift and $26.73/hr for 224 hrs	$5,988
Material	100% of maintenance labor	$5,988
Electricity	(28kwh)(3584 hr/yr)($0.0365/kwh)	$3,663
Overhead	@60% of operating labor, supervisor, maintenance labor and materials	$10,415
Administration	@2% of purchase cost	$3,760
Property Taxes	@1% of purchase cost	$1,880
Insurance	@1% of purchase cost	$1,880
Capital Recovery	@10% over 10 years	$26,846
Subtotal		$65,811
At 20% bond reduction, cost savings		-$89,000
Total		-$23,189
Emission Reduction	At 20% efficiency	4.08 tpy
Cost effectiveness		-$5,684/ton

As shown in the table above, the savings resulting from reduced bond usage is more than enough for the foundry to recovery the cost of installing and operating the advanced oxidation system. Therefore, the cost effectiveness of the system is negative, which indicates that the system is certainly cost effective.

Alternate Binder Systems in the Core Manufacturing Process

Using the alternate binder system in combination with the Sonoperoxone^{R} system or equivalent system, the VOC emissions from the Herman 3 line would be reduced by an additional 3.18 tons per year. The cost differential between the alternate binder system and binder system currently used on the Herman 3 line is $0.37215 per gallon. The cost effectiveness of reducing emissions by

changing to the alternate binder system is $3,225 per ton of VOC reduced. This is considered to be economically feasible.

Existing BACT Determinations

The EPA RACT/BACT/LAER Clearinghouse (RBLC) is a database system that provides emission limit data for industrial processes throughout the United States. The following table represents the more stringent BACT/LAER emission limitations established for foundry mold lines since 1990:

Source and Location	Permit # and Issuance Date	Facility Description	BACT Emission Limit and Control Technology Used
Dalton Foundry Warsaw Manufacturing Facility Warsaw, IN ***proposed limits***		Herman 3 pouring	0.1627 lb/ton iron;
		Herman 3 cooling	0.36 lb/ton iron; using lower VOC binder system at core making operations; using advanced oxidation (Sonoperoxone^{R} system or equivalent system)
		Herman 3 shakeout	0.115 lb/ton iron and sand;
		Herman 3 sand handling	0.115 lb/ton iron and sand;
ThyssenKrupp Waupaca, Inc., Plant 5, Tell City, Indiana	CP123-8451 February 4, 1998	Lines 5 - 8 pouring	0.5 lb/ton, 10% opacity
		Lines 5 - 8 cooling	0.5 lb/ton, 10% opacity
		Lines 5 - 8 shakeout	0.1 lb/ton, 10% opacity
ThyssenKrupp Waupaca, Inc. Plant 3 Efficiency Project Waupaca, Wisconsin	#02-RV-130 January 5, 2003	Shakeout Lines 3 through 7	1.6 lb/hr; 0.1 lb/ton no control
		Pouring/mold cooling Lines 3 through 7	8.0 lb/hr; 0.5 lb/ton; no control
Waupaca Foundry Plant 1 Line 4 modification project Waupaca, Wisconsin	#01-RV-162 June 12, 2002	Shakeout Line 4	1.4 lb/hr; 0.1 lb/ton; no control
		Pouring/mold cooling Line 4	7.0 lb/hr; 0.5 lb/ton; no control

Source and Location	Permit # and Issuance Date	Facility Description	BACT Emission Limit and Control Technology Used
Ardmore Foundry, Inc. Dublin, Oklahoma	99-344-C-1 PSD September 4, 2001	Pouring and cooling	5.25 lb/hr no control
		Shakeout	33.38 lb/hr no control
Waupaca Foundry Plant 6 Iron Foundry Project Etowah, Tennessee	54-0174-01 September 24, 2001	Mold cooling, shakeout, cast handling, finishing Lines 1-4	55.2 lb/hr (0.6 lb/ton metal) no control
Waupaca Foundry Plants 2/3 Disa Line 2 Modification Project Waupaca, Wisconsin	99-RV-118 December 22, 1999	Shakeout Line 1	1.6 lb/hr; 0.1 lb/ton no control
		Pouring/mold cooling Line 2	8.0 lb/hr; 0.5 lb/ton no control
		Shakeout Line 2	1.6 lb/hr; 0.1 lb/ton no control
Waupaca Foundry, Inc. Plant 1 Disa Line #2 Waupaca, Wisconsin	98-RV-052 July 1, 1998	Shakeout	1.6 lb/hr; 0.1 lb/ton no control

Dalton Foundry's proposed VOC BACT limits for the Herman 3 line represent the most stringent limits found for any similar operation.

Selection of BACT

IDEM agrees with the BACT limits proposed by Dalton Foundry for the Herman 3 line. BACT will include the use of automatic mold vent-off gas ignition, the use of an alternate binder system in the core making operations, and the use of a Sonoperoxone^{R} system or equivalent system.

Compliance Determination Methods

Dalton Foundry has submitted information demonstrating that VOC reductions from the use of advanced oxidation systems are highly variable and difficult to predict. As a result, IDEM has included language in the permit that allows the VOC limit on the Herman 3 cooling process to be adjusted up or down after the initial stack test results have been reviewed and approved by IDEM. Since VOC reductions from the use of advanced oxidation systems are highly variable and difficult to predict, even on a day to day basis within the same process at the same foundry, IDEM considered whether to require a continuous emissions monitoring system (CEMS) to measure VOC emissions. However, Dalton Foundry and the manufacturer of the Sonoperoxone^{R} system have stated that opacity is the most effective method of monitoring the operation of the advanced oxidation system. If functioning properly, the advanced oxidation system will minimize opacity from the Herman 3 cooling stack. Therefore, IDEM has determined that a COM will be required to monitor the opacity from the Herman 3 cooling stack. Opacity will be used as a trigger for

response steps. The trigger level will begin at 30% and will decrease to 10% as Dalton continues to optimize the system.

Compliance Schedule

In order to bring the Herman 3 line into compliance with the BACT requirements, the Permittee shall comply with the following schedule for achieving compliance.

(1) Within fifteen (15) days after issuance of this PSD permit, the Permittee shall issue a purchase order for the Sonoperoxone^{R} system or equivalent system.

(2) Within eight (8) months after issuance of this PSD permit, but no later than the date of startup of the modified Herman 3 cooling process, the Permittee shall complete the installation of the Sonoperoxone^{R} system or equivalent system and shall commence initial operation of the Sonoperoxone system.

(3) Within twelve (12) months after commencing operation of the modified Herman 3 cooling line, the Permittee shall complete troubleshooting and optimization of the Sonoperoxone^{R} system or equivalent system, sufficient to demonstrate compliance with the BACT limits established in the permit.

Appendix C
Air Quality Analysis

Introduction

Dalton Corporation Warsaw Facility (Dalton) has applied for a Prevention of Significant Deterioration (PSD) permit to modify a foundry in Warsaw in Kosciusko County, Indiana. The site is located at Universal Transverse Mercator (UTM) coordinates 595936.0 East and 4565357.0 North. The proposed facility would consist of modification of the Herman 3 molding line. Kosciusko County is designated as attainment for the National Ambient Air Quality Standards. These standards for Nitrogen Dioxide (NO_2), Sulfur Dioxide (SO_2), Carbon Monoxide (CO) and Particulate Matter less than 10 microns (PM_{10}) are set by the United States Environmental Protection Agency (U.S. EPA) to protect the public health and welfare.

James S. Rickun Environmental Consulting prepared the PSD permit application for Dalton. The permit application was received by the Office of Air Quality (OAQ) on August 4, 2003. This document provides OAQ=s Air Quality Modeling Section's review of the PSD permit application including an air quality analysis performed by the OAQ.

Air Quality Analysis Objectives

The OAQ review of the air quality impact analysis portion of the permit application will accomplish the following objectives:

A. Establish which pollutants require an air quality analysis based on source emissions.
B. Determine the ambient air concentrations of the source's emissions and provide analysis of actual stack height with respect to Good Engineering Practice (GEP).
C. Demonstrate that the source will not cause or contribute to a violation of the National Ambient Air Quality Standard (NAAQS) or Prevention of Significant Deterioration (PSD) increment.
D. Perform a brief qualitative analysis of the source's impact on general growth, soils, vegetation, endangered species and visibility in the impact area with emphasis on any Class I areas. The nearest Class I area is Kentucky's Mammoth Cave National Park which is 490 kilometers from the Dalton site in Kosciusko County, Indiana.

Summary

Dalton has applied for a PSD construction permit to modify a foundry, in Warsaw in Kosciusko County, Indiana. The PSD application was prepared by James S. Rickun Environmental Consulting of Madison, WI. Kosciusko County is currently designated as attainment for all criteria pollutants. Emission rates of one pollutant (Volatile Organic Compounds (ozone)) associated with the facility exceeded significant emission rates established in state and federal law, thus requiring air quality modeling. Modeling results taken from the Industrial Source Complex Short Term (ISCST3) model showed all pollutant impacts were predicted to be below the significant impact levels and significant monitoring de minimis levels for purposes of a National Ambient Air Quality Standards analysis. Refined modeling for NO_2, SO_2, VOC (ozone) and PM_{10} showed no violations of the NAAQS. There was no impact review conducted for the nearest Class I area, which is Mammoth Cave National Park in Kentucky. No Class I analysis is required if a source is located more than 100 kilometers (61 miles) from the nearest Class I area. An additional impact analysis on the surrounding area was conducted and no significant impact on economic growth, soils, vegetation, federal and state endangered species or visibility from Dalton was expected.

Part A - Pollutants Analyzed for Air Quality Impact

Indiana Administrative Code (326 IAC 2-2) PSD requirements apply in attainment and unclassifiable areas and require an air quality impact analysis of each regulated pollutant emitted in significant amounts by a new major stationary source or modification. Significant emission levels for each pollutant are defined in 326 IAC 2-2-1. VOCs will be emitted from Dalton and an air quality analysis is required for VOCs all of which exceeded their significant emission rates as shown in Table 1. It should be noted that all emissions are based on the Best Available Control Technology (BACT) determination and other limitations resulting from the OAQ review of the application.

TABLE 1 Dalton Significant Emission Rates (tons/yr)

Pollutant	Maximum Allowable Emissions	Significant Emission Rate
VOC (ozone)	64.21	40.0

Significant emission rates are established to determine whether a source is required to conduct an air quality analysis. If a source exceeds the significant emission rate for a pollutant, air dispersion modeling is required for that specific pollutant. A modeling analysis for each pollutant is conducted to determine whether the source modeled concentrations would exceed significant impact levels. Modeled concentrations below significant impact levels are not required to conduct further air quality modeling. Modeled concentrations exceeding the significant impact level would be required to conduct more refined modeling which would include source inventories and background data. These procedures are defined in AGuidelines for Air Quality Maintenance Planning and Analysis, Volume 10, Procedures for Evaluating Air Quality Impacts of New Stationary Sources@ October 1977, U.S. EPA Office of Air Quality Planning and Standards (OAQPS).

Part B - Ozone Impact Analysis

Ozone formation tends to occur in hot, sunny weather when NOx and VOC emissions photochemically react to form ozone. Many factors such as light winds, hot temperatures and sunlight are necessary for higher ozone production. James S. Rickun Environmental Consulting submitted its own ozone transport analysis from Dalton. This included using Scheffe tables. The results of the Scheffe screening tables show that any potential plume emitted from the facility would fall out to the northeast and relatively close to the facility.

OAQ Three-Tiered Ozone Review

OAQ incorporates a three-tiered approach in evaluating ozone impacts from a single source. The first step is to determine how VOC emissions from the new source compare to area-wide VOC emissions from Kosciusko County as well as the surrounding counties of Elkhart, Fulton, Marshall, Noble, Wabash and Whitley. Results from this analysis show Dalton=s 64 tons/yr of VOCs would comprise 0.1% of the area-wide emissions from point, area, onroad and nonroad mobile source and biogenic (naturally-occurring emissions from trees, grass and plants) emissions.

A second step is to review historical monitored data to determine ozone trends for an area and the applicable monitored value assigned to an area for designation determinations. This value is known as the design value for an area. The nearest ozone monitors within this region is the Bristol in Elkhart County which is 46 kilometers or 30 miles to the north of Dalton. The design value for the Bristol for the 1-hour ozone standard over the latest three years of monitoring data is 111 parts per billion (ppb). Wind rose analysis indicates that prevailing winds in the area occur from the southwest and west-southwest during the summer months of May through September when ozone formation is most likely to occur. Ozone impacts from Dalton would likely fall north, northeast and east northeast of the facility.

A third step in evaluating the ozone impacts from a single source is to estimate the source individual impact through a screening procedure. Dalton used the Scheffe screening tables contained in the EPA document entitled VOC/NOX Point Source Screening Table, September 1988. Using the monitoring value from the Bristol, IN site of 111 ppb adding the impact) from Dalton was 3.7 ppb for a total of 114.7 ppb. No 1-hour NAAQS violations of ozone occurred.

In summary, ozone formation is a regional issue and the emissions from Dalton will represent a small fraction of VOC emissions in the area. Ozone contribution from Dalton emissions is expected to be minimal. Ozone historical data shows that the area monitors have design values below the ozone NAAQS of 120 ppb and the Dalton ozone impact based on the emissions and screening will have minimal impact on ozone concentrations in the area.

Part C - Additional Impact Analysis

PSD regulations require additional impact analysis be conducted to show that impacts associated with the facility would not adversely affect the surrounding area. The Dalton PSD permit application provided an additional impact analysis performed by James S. Rickun Environmental Consulting. This analysis included an impact on economic growth, soils, vegetation and visibility and is listed in Section 8 of their application.

Economic Growth and Impact of Construction Analysis

A minimal construction workforce is expected and Dalton will not employ any additional people once the facility is operational. Secondary emissions are not expected to significantly impact the area as all roadways will be paved. Industrial and residential growth is predicted to have negligible impact in the area since it will be dispersed over a large area and new home construction is not expected to significantly increase. Any commercial growth, as a result of the proposed facility, will occur at a gradual rate and will be accounted for in the background concentration measurements from air quality monitors. A minimal number of support facilities will be needed. There will be no adverse impact in the area due to industrial, residential or commercial growth.

Soils Analysis

Secondary NAAQS limits were established to protect general welfare, which includes soils, vegetation, animals and crops. Soil types in Kosciusko County are of the Blount, Morley, Nappanee, Pewamo Association of which is predominately Miami silt loam with Clyde silty clay loam (Soil Survey of Kosciusko County, U.S. Department of Agriculture). The general landscape consists of Tipton Till Plain or flat to gently rolling terrain (1816-1966 Natural Features of Indiana - Indiana Academy of Science). According to the insignificant concentrations VOCs, the soils will not be adversely affected by the facility.

Vegetation Analysis

Due to the agricultural nature of the land, crops in the Kosciusko County area consist mainly of corn, wheat, oats, soybeans and hay (1992 Agricultural Census for Kosciusko County). The maximum modeled concentrations of Dalton for VOCs are well below the threshold limits necessary to have adverse impacts on surrounding vegetation such as autumn bent, nimblewill, barnyard grass, bishopscap and horsetail milkweed (Flora of Indiana - Charles Deam). Livestock in the county consist mainly of hogs, beef and milk cows, sheep and chickens (1992 Agricultural Census for Kosciusko County) and will not be adversely impacted from the modification. Trees in the area are mainly Beech, Maple, Oak and Hickory. These are hardy trees and due to the insignificant modeled concentrations, no significant adverse impacts are expected.

Federal and State Endangered Species Analysis

Federally endangered or threatened species as listed in the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana include 12 species of mussels, 4 species of birds, 2 species of bat and butterflies and 1 species of snake. The mussels and birds listed are commonly found along major rivers and lakes while the bats are found near caves. The agricultural nature of the land overall has disturbed the habitats of the butterflies and snake and the proposed facility is not expected to impact the area.

Federally endangered or threatened plants as listed in the U.S. Fish and Wildlife Service, Division of Endangered Species for Indiana list two threatened and one endangered species of plants. The endangered plant is found along the sand dunes in northern Indiana while the two threatened species do not thrive on cultivated or grazing land. The proposed facility is not expected to impact the area.

The state of Indiana=s list of endangered, special concern and extirpated nongame species, as listed in the Department of Natural Resources, Division of Fish and Wildlife, contains species of birds, amphibians, fish, mammals, mollusks and reptiles which may be found in the area of Dalton. However, the impacts are not expected to have any additional adverse effects on the habitats of the species than what has already occurred from the agricultural activity in the area.

Additional Analysis Conclusions

The nearest Class I area to the proposed merchant power facility is the Mammoth Cave National Park located approximately 490 km southwest in Kentucky. Operation of the proposed facility will not adversely affect the visibility at this Class I area. Dalton is located well beyond 100 kilometers (61 miles) from Mammoth Cave National Park and will not have significant impact on the Class I area. The results of the additional impact analysis conclude the Dalton's proposed facility will have no adverse impact on economic growth, soils, vegetation, endangered or threatened species or visibility on any Class I area.

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Part 70 PSD Significant Source Modification.

Source Background and Description

Source Name:	**Dalton Corporation, Warsaw Manufacturing Facility**
Source Location:	**1900 E. Jefferson Street, Warsaw, Indiana 46580**
County:	**Kosciusko**
SIC Code:	**3321**
Operation Permit No.:	**T085-6708-00003**
Operation Permit Issuance Date:	**not yet issued**
PSD Significant Source Modification No.:	**085-18009-00003**
Permit Reviewer:	**Nisha Sizemore**

The Office of Air Quality (OAQ) has reviewed a modification application from Dalton Corporation, Warsaw Manufacturing Facility relating to the construction of the following emission units and pollution control devices:

(a) one (1) Herman 3 pouring process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(b) one (1) Herman 3 castings cooling process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions uncontrolled and exhausting externally;

(c) one (1) Herman 3 shakeout process, constructed in 1991, with a maximum capacity of 28 tons of metal per hour and 165 tons of sand molds and cores per hour, with emissions controlled by scrubber E and baghouse W and exhausting to stacks E and W respectively;

(d) Herman 3 sand handling operations constructed in 1991, with a maximum capacity of 150 tons of sand per hour, with emissions controlled by scrubbers D and E, and baghouse W, and exhausting to stacks D, E, and W respectively;

Notes: Dalton Corporation is proposing to lengthen the existing Herman 3 cooling line. No modifications are proposed for the Herman 3 pouring process, the Herman 3 shakeout process, or the Herman 3 sand handling process. However, Dalton Corporation has requested a PSD permit for VOC emissions from the entire Herman 3 line.

History

On August 4, 2003, Dalton Corporation, Warsaw Manufacturing Facility submitted an application to the OAQ requesting to lengthen the Herman 3 cooling line. Dalton Corporation, Warsaw Manufacturing Facility submitted a Part 70 permit application on December 14, 1998. The Part 70 application is still under review.

The Herman 3 mold line was originally constructed in 1991. Dalton Corporation obtained a permit for the Herman 3 mold line when it was originally constructed; however, the permit did not address VOC emissions from the mold line. Dalton Corporation conducted stack testing for VOC emissions from the Herman 3 line in June 2001 and June 2003. The test results, combined with Dalton Corporation's production records, indicate that actual VOC emissions from the Herman 3 line were above the PSD significance thresholds in 1998. As a result, IDEM requested that Dalton Corporation submit a PSD application for VOC emissions for the entire Herman 3 line. Dalton Corporation has complied with the request by submitting a PSD application for the entire Herman 3 line as part of this application to modify the existing Herman 3 cooling process. This permit serves to bring the entire Herman 3 line into compliance with PSD, as well as to provide Dalton Corporation with the approval to modify the existing Herman 3 cooling process.

Enforcement Issue

The source has the following enforcement actions pending:

(a) Case # 1998-3320-A: IDEM sent a notice of violation on July 15, 1999 alleging violations for constructing and operating several core machines without a permit, and operating the core machines in violation of 326 IAC 2-2 (PSD) and 326 IAC 8-1-6 (BACT).

(b) Case # 2001-11054-A: IDEM sent a notice of violation on March 6, 2002 alleging violations of 326 IAC 6-4 (Fugitive Dust Emissions) due to fugitive dust from the Herman 2 cooling line, and the scrap yard.

(c) Case # 2003-13016-A: On May 27, 2003, IDEM Office of Enforcement received a referral for alleged violations of several conditions requiring compliance monitoring to be performed, pursuant to SSM085-14027-00003 issued on February 22, 2002.

IDEM will take appropriate actions concerning these cases.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (^{0}F)
PE	Herman 3 pouring	67	3.5	31,685	117
CE	Herman 3 cooling	100	3.5	40,000	98
E	Herman 3 shakeout and sand handling	45	4	47,908	105
D	Herman 3 sand handling	45	4	39,549	101
W	Herman 3 sand handling	67	4	49,867	117

Recommendation

The staff recommends to the Commissioner that the Part 70 PSD Significant Source Modification 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 August 4, 2003. Additional information was received on August 26, 2003.

Emission Calculations

See Appendix A of this document for detailed emissions calculations (7 pages).

Potential To Emit of Modification

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source 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."

This table reflects the PTE before controls, except as otherwise indicated. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	76.2
PM-10	75.7
SO_2	2.5
VOC	164.8
CO	0
NO_x	1.2

HAP's	Potential To Emit (tons/year)
chromium	0.150
cobalt	0.208
nickel	0.278
arsenic	0.396
cadmium	0.091
selenium	0.034
lead	0.59
Formaldehyde	0.0042
phenol	0.7496
benzene	1.0274
toluene	0.1599
m-xylene	0.0843

o-xylene	0.0253
naphthalene	0.0042
acrolein	0.006
hydrogen cyanide	0.2022
TOTAL	6.91

Note: The baghouse and the scrubbers controlling the shakeout and sand handling operations are already required to be operated at all times through an enforceable permit; therefore, the totals listed above for PM, PM10, and metallic HAPs represent controlled PTE.

Justification for Modification

The Part 70 Operating permit is being modified through a Part 70 PSD Significant Source Modification. This modification is being performed pursuant to 326 IAC 2-7-10.5(f)(1), because it is a modification subject to the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration).

County Attainment Status

The source is located in Kosciusko County.

Pollutant	Status
PM-10	attainment
SO_2	attainment
NO_2	attainment
Ozone	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. Kosciusko 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) Kosciusko 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 one of the 28 listed source categories under 326 IAC 2-2 the fugitive emissions are counted toward determination of PSD applicability.

Source Status

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

Pollutant	Emissions (tons/year)
PM	greater than 100
PM-10	greater than 100

SO_2	greater than 100
VOC	greater than 100
CO	greater than 100
NOx	less than 100

(a) This existing source is a major stationary source because an attainment regulated pollutant is emitted at a rate of 100 tons per year or more, and it is one of the 28 listed source categories.

(b) These emissions are based upon calculations using information submitted in the Part 70 permit application, site specific stack test results conducted in 2001 and 2003, and emission statements from the Permittee.

Potential to Emit of Modification After Issuance

The table below summarizes the potential to emit, reflecting all limits, of the significant emission units after controls. The control equipment is considered federally enforceable only after issuance of this Part 70 source modification.

1991 project to install the Herman 3 line	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	lead
Herman 3 pouring	5.33	2.37	0.91	7.37	0	0.45	0.0226
Herman 3 cooling	13.05	8.87	0	20.38	0	0	0
Herman 3 shakeout and sand handling	10.75	18.39	0	36.46	0	0	0.0045
Total from Herman 3 line	29.12	29.63	0.91	64.21	0	0.45	0.0271
Contemporaneous decreases	34.29	34.29	not applicable	not applicable	not applicable	not applicable	not applicable
Contemporaneous Increases	17.79	17.77	not applicable	not applicable	not applicable	not applicable	not applicable
Net Emissions	12.62	13.11	0.91	64.21	0	0.45	0.0271
PSD Significance Levels	25	15	40	40	100	40	0.6

Note: The contemporaneous decreases consist of the removal of two (2) Disa mold lines in 1991. The contemporaneous increases consist of the construction and operation of shotblast machine SB-8 and six grinders.

This modification to an existing major stationary source is major because the VOC emissions increase is greater than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements apply for VOC.

2003 project to modify the Herman 3 cooling operation	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO_2	VOC	CO	NO_X	lead
Herman 3 cooling (limited potential to emit)	13.05	8.87	0	N/A	0	0	0
Herman 3 cooling (past actual emissions)	6.82	4.64	0	N/A	0	0	0
Increase for proposed project	6.22	4.23	0	not applicable because already going through PSD	0	0	0
PSD Significance Levels	25	15	40	40	100	40	0.6

Federal Rule Applicability

(a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to the Herman 3 line.

(b) The Herman 3 line is subject to the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), Subpart EEEEE, for Iron and Steel Foundries. The modification to the Herman 3 line does not trigger the NEW source requirements of the NESHAP because it does not constitute a reconstruction of the emission unit. However, the Herman 3 line is subject to the existing source requirements of the NESHAP.

The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the Herman 3 line except when otherwise specified in 40 CFR 63 Subpart EEEEE. The detailed requirements of this rule will be included in the Part 70 permit.

(a) The affected source, the iron foundry, is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries, (40 CFR 63, Subpart EEEEE), effective the date the rule is published in the Federal Register. Pursuant to this rule, the Permittee must comply with 40 CFR 63, Subpart EEEEE on and after the date that is three years after the effective date of the rule, or accept and meet an enforceable HAP emissions limit below the major source threshold prior to three years after the effective date of the rule.

(b) The following emissions units comprise the affected source that is subject to 40 CFR 63, Subpart EEEEE:

(1) Herman 3 pouring; and

(2) fugitive emissions from foundry operations.

(c) The definitions of 40 CFR 63, Subpart EEEEE at 40 CFR 63.7765 are incorporated by reference.

(d) Pursuant to 40 CFR 63.7700(a) and 40 CFR 63.7683(b), the Permittee shall comply with the certification requirements in 40 CFR 63.7700(b) or prepare and implement a plan for the selection and inspection of scrap according to the requirements in 40 CFR 63.7700(c) no later than one year after the effective date of 40 CFR 63, Subpart EEEEE.

(e) The Permittee shall submit:

(1) An Initial Notification containing the information specified in 40 CFR 63.9(b)(2) no later than 120 days after the effective date of 40 CFR 63, Subpart EEEEE.

(2) A Notification of Compliance Status containing the information required by 40 CFR 63.9(h) in accordance with 40 CFR 63.7750(e). The Notification of Compliance Status must be submitted:

(A) Before the close of business on the 30th calendar day following completion of the initial compliance demonstration for each initial compliance demonstration that does not include a performance test; and

(B) Before the close of business on the 60th calendar day following the completion of the performance test according to the requirement specified in 40 CFR 63.10(d)(2) for each initial compliance demonstration that does include a performance test.

(3) If required to conduct a performance test, a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required by 40 CFR 63.7(b)(1) and 40 CFR 63.7750(d).

(4) If required to use a continuous monitoring system (CMS), notifications, if required, as specified in 40 CFR 63.9(g), by the date of submission of the notification of intent to conduct a performance test.

(5) If required to conduct opacity or visible emissions observations, the anticipated date for conducting the opacity or visible emission observations specified in 40 CFR 63.6(h)(5) in accordance with the appropriate schedule specified in 40 CFR 63.9(f) as required by 40 CFR 63.7750(a).

(f) The notifications required by paragraph (a) 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

and

United States Environmental Protection Agency, Region V
Director, Air and Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

The notifications require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

(g) The Permittee shall submit an application for a significant permit modification to IDEM, OAQ to include information from the notification of compliance status in the Title V permit.

(1) The significant permit modification application shall be consistent with 326 IAC 2-7-12, including information sufficient for IDEM, OAQ to incorporate into the Title V permit the applicable requirements of 40 CFR 63, Subpart EEEEE, a description of the affected source and activities subject to the standard, and a description of how the Permittee will meet the applicable requirements of the standard.

(2) The significant permit modification application shall be submitted no later than the date that the notification of compliance status is due.

(3) The significant permit modification application 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

State Rule Applicability - Herman 3 pouring, cooling, shakeout, and sand handling

326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 8-1-6 (BACT)

VOC

The Herman 3 pouring, cooling, shakeout, and sand handling operations are subject to the requirements of 326 IAC 2-2 (PSD) for VOC emissions. The BACT analysis is included in Appendix B of this document. The PSD BACT requirements will satisfy the requirements of 326 IAC 8-1-6 (BACT). The BACT establishes VOC emission limits of 0.1627 pound per ton of metal for pouring, 0.41 pound per ton of metal for cooling, and 0.115 pound per ton of metal and sand combined for shakeout and sand handling. The Permittee shall achieve these limits through the use of a Sonoperoxone^{R} system or equivalent system, low VOC binder materials, and mold vent-off gas ignition. A compliance schedule is included in the permit for achieving these BACT limits. More detailed information is included in the BACT analysis in Appendix B.

The air quality analysis is included in Appendix C of this document.

PM/PM10 and lead

The Herman 3 pouring, cooling, shakeout, and sand handling operations are not subject to the requirements of 326 IAC 2-2 (PSD) for PM/PM10 emissions. In 1991 when the Herman 3 operations were originally constructed, two (2) Disa lines were taken out of operation. As a result,

the netting analysis shows that the Herman 3 operations were able to net out of PSD review for PM/PM10 emissions.

Dalton now proposes to modify the existing Herman 3 cooling line. The modification consists of extending the line to allow for additional cooling time. This project does not increase the capacity of the line. This PM/PM10 and lead emissions increases from this proposed modification are less than the PSD significance levels. Therefore, this modification is not subject to the requirements of PSD for PM/PM10.

The following conditions shall apply in order to render PSD for PM/PM10 and lead not applicable to the Herman 3 line:

(a) The PM emissions from the Herman 3 pouring process shall not exceed 0.1176 pounds per ton of metal throughput.

(b) The PM10 emissions from the Herman 3 pouring process shall not exceed 0.0524 pounds per ton of metal throughput.

(c) The PM emissions from the Herman 3 cooling process shall not exceed 0.2881 pounds per ton of metal throughput.

(d) The PM10 emissions from the Herman 3 cooling process shall not exceed 0.1959 pounds per ton of metal throughput.

(e) The PM emissions from the Herman 3 shakeout and sand handling process shall not exceed 0.034 pounds per ton of metal and sand throughput.

(f) The PM10 emissions from the Herman 3 shakeout and sand handling process shall not exceed 0.058 pounds per ton of metal and sand throughput.

(g) The combined lead emissions from the Herman 3 pouring, cooling, shakeout and sand handling processes shall not exceed 0.013 pounds per ton of metal throughput.

(h) The metal throughput to the Herman 3 line shall not exceed 90,578 tons per 12 consecutive month period with compliance determined at the end of each month.

(i) The sand throughput to the Herman 3 line shall not exceed 543,470 tons per 12 consecutive month period with compliance determined at the end of each month.

Other Pollutants

The Herman 3 line emits SO_2 and NOx in amounts less than the PSD significance levels; therefore, the Herman 3 line is not subject to the requirements of PSD for any other pollutant.

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

(a) The particulate emissions from the Herman 3 pouring operation shall not exceed 58.12 pounds per hour when operating at a process weight rate of 193 tons per hour.

(b) The particulate emissions from the Herman 3 cooling operation shall not exceed 58.12 pounds per hour when operating at a process weight rate of 193 tons per hour.

(c) The particulate emissions from the Herman 3 shakeout and sand handling operation shall not exceed 58.12 pounds per hour when operating at a process weight rate of 193 tons per hour.

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

$E = 55.0 P^{0.11} - 40$ where E = rate of emission in pounds per hour and P = process weight rate in tons per hour

The baghouse and scrubbers shall be in operation at all times the Herman 3 shakeout or sand handling is in operation, in order to comply with the limit.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The compliance monitoring requirements applicable to this modification are as follows:

The Herman 3 line has applicable compliance monitoring conditions as specified below:

(a) Visible emission notations of each baghouse and scrubber stack exhausts shall be performed once per shift during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal. For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions. A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process. The Compliance Response Plan for these units 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, Implementation, Records, and Reports, shall be considered a deviation from this permit.

(b) The Permittee shall record the total static pressure drop across the baghouse used in conjunction with the Herman 3 sand handling process listed in this section, at least once per shift when the Herman 3 sand handling process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 4.0 and 10.0 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, Implementation, Records, and Reports, 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.

(c) An inspection shall be performed each calendar quarter of all bags controlling the processes at this source. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

(d) In the event that bag failure has been observed:

(1) 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 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.

(2) 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. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(e) The Permittee shall record the flow rate and total static pressure drop across the scrubbers used in conjunction with the these operations, at least once per shift when the associated process is in operation. When for any one reading, the pressure drop across a scrubber is outside the normal range established in the permit 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. When for any one reading, the flow rate is below the minimum established in the permit or a minimum flow rate 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 flow rate that is below the above mentioned minimum is not a deviation from this permit. 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.

The instruments used for determining the flow rate and 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.

(f) An inspection shall be performed each calender quarter of each of the scrubbers controlling these facilities. Inspections required by this permit shall not be performed in consecutive months. All defective scrubber parts shall be replaced.

(g) In the event that scrubber failure has been observed the failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).

(h) Upon commencing initial operation of the Sonoperoxone^{R} system, the Permittee shall monitor and record the ultra-sonic power of the Sonoperoxone^{R} system used in conjunction with the Herman 3 line, at least once per shift when the Herman 3 line is in operation. When for any one reading, the ultra-sonic power is less than 1500 W or a minimum 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. An ultra-sonic power reading that is below the above mentioned minimum is not a deviation from this permit. 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.

(i) Upon commencing initial operation of the Sonoperoxone^{R} system, the Permittee shall monitor and record the ozone generator plasma voltage of the Sonoperoxone^{R} system used in conjunction with the Herman 3 line, at least once per shift when the Herman 3 line is in operation. When for any one reading, the ozone generator plasma voltage is less than 2700 V or a minimum 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. An ozone generator plasma voltage reading that is below the above mentioned minimum is not a deviation from this permit. 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.

(j) Upon commencing initial operation of the Sonoperoxone^{R} system, the Permittee shall monitor and record the hydrogen peroxide usage of the Sonoperoxone^{R} system used in conjunction with the Herman 3 line, at least once per shift when the Herman 3 line is in operation. When for any one reading, the hydrogen peroxide usage is less than 1 gallon per hour of muller operation, or a minimum 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 peroxide usage reading that is below the above mentioned minimum is not a deviation from this permit. 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.

The instruments used for determining the ultra-sonic power, the ozone generator plasma voltage and the hydrogen peroxide usage 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.

(k) Pursuant to 326 IAC 2-2-3, a continuous monitoring system shall be installed, calibrated, maintained, and operated for measuring opacity from the Herman 3 cooling stack. The continuous monitoring systems shall meet the performance specifications of 326 IAC 3-5-2.

(1) Beginning the date of startup of the modified Herman 3 cooling line and ending six months after startup of the Herman 3 cooling line, appropriate response steps shall be taken in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the opacity exceeds 30 percent for three (3) consecutive six (6) minute averaging periods. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

(2) Beginning six months after startup of the Herman 3 cooling line and ending 1 year after startup of the Herman 3 cooling line, appropriate response steps shall be taken in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the opacity exceeds 20 percent for three (3) consecutive six (6) minute averaging periods. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

(3) Beginning 1 year after startup of the Herman 3 cooling line, appropriate response steps shall be taken in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports whenever the opacity exceeds 10 percent for three (3) consecutive six (6) minute averaging periods. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation, Implementation, Records, and Reports, shall be considered a violation of this permit.

(l) Records shall be kept of the sand and metal throughputs to the Herman 3 line each month. A report of this information shall be submitted each calendar quarter.

(m) Within 180 days after commencing operation of the modified Herman 3 cooling line, the Permittee shall conduct VOC and lead stack tests on the Herman 3 pouring, cooling, shakeout and sand handling operations. Within 180 days after commencing operation of the modified Herman 3 cooling line, the Permittee shall conduct PM and PM10 stack tests on the Herman 3 shakeout and sand handling operations. The VOC tests shall be repeated at least once every 2.5 years. The PM and PM10 tests shall be repeated at least once every 5 years.

Conclusion

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 PSD Significant Source Modification No. 085-18009-00003.

Past Actual Emissions

Appendix A: Emission Calculations

Company Name: The Dalton Foundries, Inc.
Plant Location: 19 E. Jefferson Street, Warsaw, Indiana 46580
County: Kosciusko
Permit Reviewer: Nisha Sizemore
Title V mod #: 085-14027
Plt. ID #: 085-00003

* * Process Emissions * *

Year	Cupola	Molds (iron)	Sand	Processing (Finishing)
1997	171,438	170,674	1,008,331	101,544
1998	174,674	174,699	1,015,622	103,272
1999	171,846	171,845	963,887	101,541
2000	165,464	164,724	926,330	97,914
2001	138,792	138,017	788,105	68,215
avg 97/98	173,056	172,687	1,011,977	102,408
avg per hour	19.76	19.71	115.52	11.69

Amount charged: 1.06 x amount melted = 20.94
Amount of waste sand: 10% of sand handled 11.55

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Scrap and Charge Handling SCC# 3-04-003-15 AP-42 Ch. 12.10	20.94	PM	0.60	55.03	55.03		
		PM-10	0.36	33.02	33.02		
		SO2	0.00	0.00	0.00		
		NOx	0.00	0.00	0.00		
		VOC	0.00	0.00	0.00		
		CO	0.00	0.00	0.00		
		chromium	0.00	0.02	0.02		
		cobalt	0.00	0.00	0.00		
		nickel	0.00	0.04	0.04		
		arsenic	0.00	0.01	0.01		
		cadmium	0.00	0.00	0.00		
		selenium	0.00	0.00	0.00		
		Lead	0.00	0.21	0.21		

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Cupola	19.76	PM	13.8	1194.09	71.05	scrubber	94.05%
		PM-10	12.4	1072.95	63.84	scrubber	94.05%
		SO2	1.25	108.16	108.16		
		NOx	0.1	8.65	8.65		
EPA SCC# 3-04-003-01		VOC	0.18	15.58	0.78	afterburner	95.00%
AP-42 Ch. 12.10		CO	145	12546.56	627.33	afterburner	95.00%
		chromium	0.00718	0.62	0.04	scrubber	94.05%
		cobalt	0.00055	0.05	0.00	scrubber	94.05%
		nickel	0.00483	0.42	0.02	scrubber	94.05%
		arsenic	0.00179	0.15	0.01	scrubber	94.05%
		cadmium	0.00000	0.00	0.00	scrubber	94.05%
		selenium	0.00028	0.02	0.00	scrubber	94.05%
		Lead	0.03174	2.75	0.16	scrubber	94.05%
		phenol	0.01152	1.00	0.05	afterburner	95.00%
		benzene	0.06246	5.40	0.27	afterburner	95.00%
		formaldehyde	0.00126	0.11	0.01	afterburner	95.00%
		xylene	0.0216	1.87	0.09	afterburner	95.00%
		toluene	0.02538	2.20	0.11	afterburner	95.00%

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Pouring/Casting	19.76	PM	0.1176	10.18	10.18		
SCC# 3-04-003-18		PM-10	0.0524	4.53	4.53		
		SO2	0.02	1.73	1.73		
EFs for PM, PM10,		NOx	0.01	0.87	0.87		
and VOC are from		VOC	0.163	14.08	14.08		
site specific stack tests		CO	---	0.00	0.00		
		chromium	0.00	0.14	0.14		
		cobalt	0.00	0.01	0.01		
		nickel	0.00	0.24	0.24		
		arsenic	0.00	0.05	0.05		
		cadmium	0.00	0.02	0.02		
		selenium	0.00	0.00	0.00		
		Lead	0.02	1.40	1.40		

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Cooling	19.76	PM	0.288	24.93	24.93	none	
SCC# 3-04-003-25		PM-10	0.196	16.95	16.95	none	
		SO2	0.000	0.00	0.00		
EFs for PM, PM10,		NOx	0.000	0.00	0.00		
and VOC are from		VOC	0.450	38.94	38.94		
site specific stack tests		CO	---	0.00	0.00		
		Lead	---	0.00	0.00		

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton of sand and metal)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Shakeout and sand handling	19.76	PM	0.034	20.09	20.09	scrubber and baghouse	
		PM-10	0.058	34.37	34.37		
EFs for PM, PM10, and VOC are from site specific stack tests conducted on Herman 3 in June, 2001.	Rate (tons sand/hr) 115.52	SO2	0.00	0.00	0.00		
		NOx	0.00	0.00	0.00		
		VOC	0.115	68.14	68.14		
		CO	---	0.00	0.00		
		chromium	0.00	0.11	0.11		
		cobalt	0.00	0.01	0.01		
		nickel	0.00	0.19	0.19		
		arsenic	0.00	0.04	0.04		
		cadmium	0.00	0.02	0.02		
		selenium	0.00	0.00	0.00		
		Lead	0.01	1.07	1.07		

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Cleaning and Finishing	11.69	PM	17.00	870.47	25.94	baghouse	97.02%
		PM-10	1.70	87.05	2.59	baghouse	97.02%
		SO2	0.00	0.00	0.00		
SCC# 3-04-003-40		NOx	0.00	0.00	0.00		
AP-42 Ch. 12.10		VOC	0.00	0.00	0.00		
		CO	0.00	0.00	0.00		
		chromium	0.01	0.33	0.01		
		cobalt	0.00	0.03	0.00		
		nickel	0.01	0.58	0.02		
		arsenic	0.00	0.11	0.00		
		cadmium	0.00	0.05	0.00		
		selenium	0.00	0.01	0.00		
		Lead	0.00	0.23	0.01		
		total HAPs			0.04		

Process:	Rate (tons sand/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Waste Sand Transport	11.55	PM	3.6000000000000001	182.2	3.6	baghouse R	98.01%
EPA SCC# 3-04-003-50		PM-10	0.54	27.3	0.5		98.01%

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

	Potential Emissions (tons/year)	Actual Emissions After Controls (tons/year)	PSD Significance Level (tons/year)	Allowable after Modification (tons/year)	Allowables from new core making process (tons/year)	Allowables to allot to rest of plant processes (tons/year)
PM	2357.63	211.54	25	236.54	1.34	234.50
PM-10	1276.89	156.55	15	171.55	0.73	170.12
SO2	109.99	109.99	40	149.99	0.04	149.85
NOx	19.12	19.12	40	59.12	7.23	42.29
VOC	137.23	122.43	40	162.43	24.44	137.49
CO	12554.66	635.43	100	735.43	6.07	721.26
chromium	1.20	0.29				
cobalt	0.09	0.02				
nickel	1.43	0.47				
arsenic	0.35	0.10				
cadmium	0.09	0.04				
selenium	0.04	0.01				
Lead	5.65	2.85	0.6	3.45	0.00	3.45
phenol	1.00	0.05				
benzene	5.40	0.27				
formaldehyde	0.11	0.01				
xylene	1.87	0.09				
toluene	2.20	0.11				
hexane	0.17	0.17				
Total HAPs	19.60	4.48				

	Allowable (tons/year)	Core room emissions increases (tons/year)	preheater emissions (tons/year)	Portion of allowable to allot to rest of plant (tons/year)
PM	236.54	1.34	0.7	234.49
PM-10	171.55	0.73	0.7	170.12
SO2	149.99	0.04	0.1	149.85
NOx	59.12	7.23	9.6	42.29
VOC	162.43	24.49	0.5	137.45
CO	735.43	6.07	8.1	721.26
lead	3.45	0.00	0.00	3.45
New Limits				

Appendix A: Emission Calculations

Company Name: The Dalton Foundries, Inc.
Plant Location: 19 E. Jefferson Street, Warsaw, Indiana 46580
County: Kosciusko
Permit Reviewer: Nisha Sizemore
Title V mod #: 085-14027
Plt. ID #: 085-00003

Process	cupola	pouring	cooling	Total EF (lb/ton metal)	finishing (lb/ton finished)	charging (lb/ton charged)	waste sand	Total EF (lb/ton sand)	shakeout and sand handling (lb/ton metal and sand)
PM EF	0.821	0.118	0.288	1.2268	0.5066	0.600	0.072	0.072	0.034
PM10 EF	0.738	0.052	0.196	0.9861	0.05066	0.360	0.011	0.011	0.058
SO2 EF	1.250	0.020	0.000	1.27	0	0.000			0.000
NOx EF	0.100	0.010	0.000	0.11	0	0.000			0.000
VOC EF	0.009	0.163	0.450	0.6217	0	0.000			0.115
CO EFs	7.250			7.25	0	0.000			0.000
chromium EF	0.000	0.002		0.00202721		0.000			0.00002

cobalt EF	0.000	0.000	0.000162725		0.000	0.00000
nickel EF	0.000	0.003	0.003097385		0.000	0.00003
arsenic EF	0.000	0.001	0.000656505		0.000	0.00001
cadmium EF	0.000	0.000	0.00025		0.000	0.00000
selenium EF	0.000	0.000	0.00005666		0.000	0.00000
lead EF	0.002	0.016	0.01805853	0.0045	0.002	0.00018
phenol EF	0.001		0.000576			
benzene EF	0.003		0.003123			
formaldehyde EF	0.000		0.000063			
xylene EF	0.001		0.00108			
toluene EF	0.001		0.001269			

Pollutant	Allowable Emissions (tons/yr)	EF (lbs/ton melted)	EF (lb/ton charged)	EF (lbs/ton waste sand)	EF (lbs/ton finished)	EF (lb/ton metal and sand)	Allowable Throughputs (tons melted/yr)	(tons charged/yr)	(tons sand/yr)	(tons finished/yr)
PM	234.50	1.227	0.6	0.072	0.507	0.0339	191,656	203,156	1,149,937	114,994
PM10	170.12	0.986	0.36	0.011	0.051	0.058	**187,919**	**199,194**	**1,127,516**	**112,752**
SO2	149.85	1.270	0			0	235,985	250,144	1,415,911	141,591
NOx	42.29	0.110	0			0	768,874	815,007	4,613,245	461,325
VOC	137.49	0.622	0	0.000		0.115	192,744	204,308	1,156,463	115,646
CO	721.26	7.250	0			0	198,968	210,906	1,193,806	119,381
lead	3.45	0.018	0.0023			0.000184184	316,391	335,374	1,898,344	189,834

metal finished is 60% of amount of metal melted
sand/metal ratio between 5.7 and 6.5, avg about 6
sand to metal ratio = 6
charge to melt ratio = 1.06
waste sand to sand ratio = 0.1

The Dalton Foundries, Inc.
19 E. Jefferson Street, Warsaw, Indiana 46580

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Scrap and Charge	22.74	PM	0.60	59.76	59.76		
Handling		PM-10	0.36	35.85	35.85		
SCC# 3-04-003-15		SO2	0.00	0.00	0.00		
AP-42 Ch. 12.10		NOx	0.00	0.00	0.00		
		VOC	0.00	0.00	0.00		
		CO	0.00	0.00	0.00		
		chromium	0.00	0.02	0.02		
		cobalt	0.00	0.00	0.00		
		nickel	0.00	0.04	0.04		
		arsenic	0.00	0.01	0.01		
		cadmium	0.00	0.00	0.00		
		selenium	0.00	0.00	0.00		
		Lead	0.00	0.23	0.23		

The Dalton Foundries, Inc.
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Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Cupola	21.45	PM	13.8	1296.64	77.15	scrubber	94.05%
		PM-10	12.4	1165.10	69.32	scrubber	94.05%
		SO2	1.25	117.45	117.45		
		NOx	0.1	9.40	9.40		
EPA SCC# 3-04-003-01		VOC	0.18	16.91	0.85	afterburner	95.00%
AP-42 Ch. 12.10		CO	145	13624.15	681.21	afterburner	95.00%
		chromium	0.00718	0.67	0.04	scrubber	94.05%
		cobalt	0.00055	0.05	0.00	scrubber	94.05%
		nickel	0.00483	0.45	0.03	scrubber	94.05%
		arsenic	0.00179	0.17	0.01	scrubber	94.05%
		cadmium	0	0.00	0.00	scrubber	94.05%
		selenium	0.00028	0.03	0.00	scrubber	94.05%
		Lead	0.03174	2.98	0.18	scrubber	94.05%
		phenol	0.01152	1.08	0.05	afterburner	95.00%
		benzene	0.06246	5.87	0.29	afterburner	95.00%
		formaldehyde	0.00126	0.12	0.01	afterburner	95.00%
		xylene	0.0216	2.03	0.10	afterburner	95.00%
		toluene	0.02538	2.38	0.12	afterburner	95.00%

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Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Pouring/Casting	21.45	PM	0.1176	11.05	11.05		
SCC# 3-04-003-18		PM-10	0.0524	4.92	4.92		
		SO2	0.0200	1.88	1.88		
		NOx	0.0100	0.94	0.94		
		VOC	0.1627	15.29	15.29		
EFs for PM, PM10,		CO	---	0.00	0.00		
and VOC are from		chromium	0.0016	0.15	0.15		
site specific stack tests		cobalt	0.0001	0.01	0.01		
		nickel	0.0028	0.26	0.26		
		arsenic	0.0006	0.05	0.05		
		cadmium	0.0003	0.02	0.02		
		selenium	0.0000	0.00	0.00		
		Lead	0.0162	1.52	1.52		

Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Cooling	21.45	PM	0.288	27.07	27.07	none	
SCC# 3-04-003-25		PM-10	0.196	18.41	18.41	none	
		SO2	0.000	0.00	0.00		
EFs for PM, PM10,		NOx	0.000	0.00	0.00		
and VOC are from		VOC	0.450	42.28	42.28		
site specific stack tests		CO	---	0.00	0.00		
		Lead	---	0.00	0.00		

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Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton of iron and sand)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Shakeout	21.45	PM	0.034	22.30	22.30	scrubber	
and sand handling		PM-10	0.058	38.15	38.15	scrubber	
SCC# 3-04-003-31	Rate	SO2	0.000	0.00	0.00		
AP-42 Ch. 12.10	(tons sand/hr)	NOx	0.000	0.00	0.00		
	128.71	VOC	0.115	75.64	75.64		
EFs for PM, PM10,		CO	---	0.00	0.00		
and VOC are from		chromium	0.00	0.11	0.00	scrubber	98.51%
site specific stack tests		cobalt	0.00	0.01	0.00	scrubber	98.51%
		nickel	0.00	0.20	0.00	scrubber	98.51%
		arsenic	0.00	0.04	0.00	scrubber	98.51%
		cadmium	0.00	0.02	0.00	scrubber	98.51%
		selenium	0.00	0.00	0.00	scrubber	98.51%
		Lead	0.01	1.16	0.02	scrubber	98.51%

The Dalton Foundries, Inc.
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Process:	Rate (tons iron/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Castings Cleaning and Finishing	12.87	PM	17.00	958.39	28.56	baghouse	97.02%
		PM-10	1.70	95.84	2.86	baghouse	97.02%
		SO2	0.00	0.00	0.00		
SCC# 3-04-003-40		NOx	0.00	0.00	0.00		
AP-42 Ch. 12.10		VOC	0.00	0.00	0.00		
		CO	0.00	0.00	0.00		
		chromium	0.01	0.36	0.01	baghouse	97.02%
		cobalt	0.00	0.03	0.00	baghouse	97.02%
		nickel	0.01	0.64	0.02	baghouse	97.02%
		arsenic	0.00	0.12	0.00	baghouse	97.02%
		cadmium	0.00	0.06	0.00	baghouse	97.02%
		selenium	0.00	0.01	0.00	baghouse	97.02%
		Lead	0.00450	0.25	0.01	baghouse	97.02%
		total HAPs			0.04		

Process:	Rate (tons sand/hr)	Pollutant	Ef (lb/ton produced)	Ebc (ton/yr)	Eac (ton/yr)	Type of control	Control Efficiency (%)
Waste Sand Transport	12.87	PM	3.60	203.0	4.0	baghouse R	98.01%
EPA SCC# 3-04-003-50		PM-10	0.54	30.4	0.6		98.01%

The Dalton Foundries, Inc.
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	Potential Emissions (tons/year)	Limited Emissions (tons/year)	Allowable Emissions (tons/yr)
PM	2578.16	229.92	234.50
PM-10	1388.71	170.12	170.12
SO2	119.33	119.33	149.85
NOx	10.34	10.34	42.29
VOC	150.12	134.05	137.49
CO	13624.15	681.21	721.26
chromium	1.30	0.20	
cobalt	0.10	0.02	
nickel	1.56	0.31	
arsenic	0.38	0.07	
cadmium	0.10	0.03	
selenium	0.04	0.01	
Lead	6.14	1.95	3.45
phenol	1.08	0.05	
benzene	5.87	0.29	
formaldehyde	0.12	0.01	
xylene	2.03	0.10	
toluene	2.38	0.12	
hexane	0.17	0.17	
Total HAPs	21.29	3.33	

Methodology:
Ef = Emission factor
Ebc = Potential Emissions before controls = Rate (units/hr) x Ef(lbs/unit) x 8760 hrs/yr / 2000 lbs/hr
Eac = Potential Emissions after controls = (1-effiency/100) x Ebc
1 lb = 2000 tons

Appendix A: Emission Calculations

Company Name: Dalton Corporation, Warsaw Manufacturing Facility
Plant Location: 1900 E. Jefferson Street, Warsaw, Indiana 46580
County: Kosciusko
Permit Reviewer: Nisha Sizemore
Title V mod #: 085-18009
Plt. ID #: 085-00003

The Herman 3 pouring, cooling, shakeout and sand handling systems were stack tested for PM, PM10, and VOC emissions in June 2001 and May 2003.
Stack Test results

Emission Point	Test Run	PM (lb/hr)	PM10 (lb/hr)	VOC (lb/hr)
Scrubber D	1	0.982	2.965	0.951
	2	1.1492	1.563	1.244
	3	0.7667	0.8664	1.312
Scrubber E	1	1.2965	2.466	8.11
	2	1.659	5.011	11.19
	3	1.5326		6.69
Baghouse W	1	2.1303	0.93	2.76
	2	1.3401		3.04

	3	0.5414		3.62
pouring	1		0.77	1.85
	2		1.42	4.25
	3			4.19
cooling	1	7.2045		4.63
	2	6.4181		14.21
	3	4.4753	3.94	9.74

H3 molding line throughputs during stack test

Emission Point	Material	Run 1	Run 2	Run 3	Average
Scrubber D	metal	21.85	22.57	22.22	22.21
	mold sand	84.27	87.86	86.5	86.21
	core sand	2.06	2.15	2.11	2.11
	Total sand	86.33	90.01	88.61	88.32
	Total metal and sand	108.18	112.58	110.83	110.53
Scrubber E	metal	21.99	22.78	23.5	22.76
	mold sand	85.61	88.67	91.49	88.59
	core sand	2.09	2.17	2.23	2.16
	Total sand	87.7	90.84	93.72	90.75
	Total metal and sand	109.69	113.62	117.22	113.51
Baghouse W	metal	22.5	21.74	23.29	22.51
	mold sand	87.6	84.63	90.45	87.56
	core sand	2.14	2.07	2.21	2.14
	Total sand	89.74	86.7	92.66	89.7
	Total metal and sand	112.24	108.44	115.95	112.21
pouring	metal	19.53	21.74	21.17	20.81
	mold sand	76.04	84.63	82.43	81.03
	core sand	1.88	2.07	2.01	1.99
	Total sand	77.92	86.7	84.44	83.02
cooling	metal	19.94	22.89	20.11	20.98
	mold sand	77.63	89.11	84.23	83.66
	core sand	1.9	2.18	1.89	1.99
	Total sand	79.53	91.29	86.12	85.65

Emission Point	Test Run	PM (lb/ton)	PM10 (lb/ton)	VOC (lb/ton)	
Scrubber D	1	0.009	0.027	0.009	Notes: Emission factors for scrubbers and baghouse
	2	0.01	0.014	0.011	are in pounds per ton of sand and metal.
	3	0.007	0.008	0.012	Emission factors for pouring and cooling are in
	Avg	0.0087	0.0164	0.0106	pounds per ton of metal.
Scrubber E	1	0.012	0.022	0.074	
	2	0.015	0.044	0.098	
	3	0.013		0.057	
	Avg	0.0132	0.0333	0.0765	
Baghouse W	1	0.019	0.008	0.025	shakeout and fluidized bed portion of sand handling
	2	0.012		0.028	
	3	0.005		0.031	
	Avg	0.012	0.0083	0.0279	
pouring	1		0.039	0.095	
	2		0.065	0.195	
	3			0.198	
	Avg	0.1176	0.0524	0.1627	
cooling	1	0.361			
	2	0.28			
	3	0.223	0.196		
	Avg	0.2881	0.1959	0.45	

Note: PM emissions from pouring are from a previous stack test conducted on January 12, 1999.

Herman 3 Installation: 1991

Past Actual Emissions
Based on throughputs for years 1987 and 1988

metal	10,438.60	tons/yr avg
sand	62,631.60	tons/yr avg

	PM, PM10, & VOC Emission Factors based on stack testing			Past Actual Emissions (tons/yr)			
	pouring	cooling	shakeout and sand handling	pouring	cooling	shakeout and sand handling	Total
PM	0.1176	0.2881	0.0339	0.61	1.50	1.24	3.36
PM-10	0.0524	0.1959	0.058	0.27	1.02	2.12	3.41
SO2	0.02	0	0	0.10	0.00	0.00	0.10
NOx	0.01	0	0	0.05	0.00	0.00	0.05
VOC	0.1627	0.45	0.115	0.85	2.35	4.20	7.40
CO	---	---	---	0.00	0.00	0.00	0.00
Lead	0.01617	0	0.01232	0.08	0.00	0.06	0.15

PM, PM10, and VOC emission factors for shakeout and sand handling are in pounds per ton of sand and metal combined.
All other emission factors are in pounds per ton of metal.

Allowable Emissions for Herman 3 line:

	PSD Significance Levels (tons/yr)	Past Actuals (tons/yr)	Total Allowable (tons/yr)
PM	25	3.36	28.36
PM-10	15	3.41	18.41
SO2	40	0.10	40.10
NOx	40	0.05	40.05
VOC	40	7.40	47.40
CO	100	0.00	100.00
Lead	0.6	0.15	0.75

Actual Emissions from Herman 3 in 1998

metal throughput (tons) 62,493 Note: This throughput is from Dalton's 1998 emission statement.
sand throughput (tons) 365,998

	PM, PM10, & VOC Emission Factors based on stack testing			Past Actual Emissions (tons/yr)				
	pouring	cooling	shakeout and sand handling	pouring	cooling	shakeout and sand handling	Total	Total with credits
PM	0.1176	0.2881	0.0339	3.67	9.00	7.26	19.94	16.58
PM-10	0.0524	0.1959	0.058	1.64	6.12	12.43	20.18	16.77
SO2	0.02	0	0	0.62	0.00	0.00	0.62	0.52
NOx	0.01	0	0	0.31	0.00	0.00	0.31	0.26
VOC	0.1627	0.45	0.115	5.08	14.06	24.64	43.78	36.38
CO	---	---	---	0.00	0.00	0.00	0.00	0.00
Lead	0.01617	0	0.01232	0.51	0.00	0.38	0.89	0.74

PM, PM10, and VOC emission factors for shakeout and sand handling are in pounds per ton of sand and metal combined.
All other emission factors are in pounds per ton of metal.

	Actual Emissions in 1998 from H3 line (tons/yr)	Actual Emissions in 1998 from coremaking units constructed in 1991 (tons/yr)	Total Actual Emissions in 1998 from all equipment constructed in 1991 (tons/yr)	Limits necessary to render PSD not applicable (tons/yr)
PM	19.94	0.07	20.01	28.36
PM-10	20.18	0.11	20.29	18.41
SO2	0.62	0.01	0.63	40.10
NOx	0.31	0.88	1.19	40.05
VOC	43.78	4.53	**48.31**	47.40
CO	0.00	0.74	0.74	100.00
Lead	0.89	0	**0.89**	0.75

Potential Emissions from Herman 3 line.

	Dalton's proposed production limits tons/yr
metal	90,578
sand	543,470

	PM, PM10, & VOC Emission Factors based on stack testing			Potential Emissions (tons/yr)			
	pouring	cooling	shakeout and sand handling	pouring	cooling	shakeout and sand handling	Total
PM	0.1176	0.2881	0.0339	5.33	13.05	10.75	29.12
PM-10	0.0524	0.1959	0.058	2.37	8.87	18.39	29.63
SO2	0.02	0	0	0.91	0.00	0.00	0.91
NOx	0.01	0	0	0.45	0.00	0.00	0.45
VOC	0.1627	0.45	0.115	7.37	20.38	36.46	64.21
CO	---	---	---	0.00	0.00	0.00	0.00
Lead	0.01617	0	0.01232	0.73	0.00	3.91	4.64

Actual Emissions from Herman 3 in 2001 and 2002

year	2001	2002	average	
metal throughput (tons)	47,374		47374	Note: These are from Dalton's emission statements.
sand throughput (tons)	277,610		277610	

	PM, PM10, & VOC Emission Factors based on stack testing			Past Actual Emissions (tons/yr)			
	pouring	cooling	shakeout and sand handling	pouring	cooling	shakeout and sand handling	Total
PM	0.1176	0.2881	0.0339	2.79	6.82	5.51	15.12
PM-10	0.0524	0.1959	0.058	1.24	4.64	9.42	15.31
SO2	0.02	0	0	0.47	0.00	0.00	0.47
NOx	0.01	0	0	0.24	0.00	0.00	0.24
VOC	0.1627	0.45	0.115	3.85	10.66	18.69	33.20
CO	---	---	---	0.00	0.00	0.00	0.00
Lead	0.01617	0	0.01232	0.38	0.00	2.00	2.38

	Potential Emissions from H3 Cooling (tons/yr)	Past Actual Emissions from Herman 3 cooling (tons/yr)	Emission Increase for modification to Herman 3 cooling (tons/yr)	PSD Allowable Emissions (tons/yr)
PM	13.05	6.82	6.22	25
PM-10	8.87	4.64	4.23	15
SO2	0.00	0.00	0.00	40
NOx	0.00	0.00	0.00	40
VOC	20.38	10.66	9.72	40
CO	0.00	0.00	0.00	100
Lead	0.00	0.00	0.00	0.6

Limits pursuant to 326 IAC 6-3-2:

Process	Process Weight Rate (tons/hr)	PM Limit (lb/hr)
H3 pouring	193	58.12
H3 cooling	193	58.12
H3 shakeout & sand handling	193	58.12