NOTICE OF 30-DAY PERIOD
FOR PUBLIC COMMENT

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

for Dalton Corporation, Warsaw Manufacturing Facility in Kosciusko County

Significant Source Modification No.: 085-39391-00003
Significant Permit Modification/Revision No.: 085-39431-00003

The Indiana Department of Environmental Management (IDEM) has received an application from Dalton Corporation, Warsaw Manufacturing Facility, located at 1900 E. Jefferson Street, Warsaw, Indiana 46580, for a significant modification of its Part 70 Operating Permit issued on August 20, 2012. If approved by IDEM’s Office of Air Quality (OAQ), this proposed modification would allow Dalton Corporation, Warsaw Manufacturing Facility to make certain changes at its existing source. Dalton Corporation, Warsaw Manufacturing Facility has applied to construct a phenolic urethane core making line, finishing stations, to replace an existing core machine, and install an enclosed pneumatic sand transporter at an existing Phenolic Urethane Core Making Line. In addition, the Permittee requested a modification for the re-allocation of emissions and throughput limitations for existing vibratory shaker VB1, cupola, and Herman #2 and Herman #3.

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

A copy of the permit application and IDEM’s preliminary findings are available at:
 Warsaw Community Public Library
  310 East Main Street
  Warsaw, IN 46580
 and
 IDEM Northern Regional Office
  300 North Dr. Martin Luther King Jr. Boulevard, Suite 450
  South Bend, IN 46601-1295

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

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

How can you participate in this process?

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

Comments and supporting documentation, or a request for a public hearing should be sent in writing to IDEM at the address below. If you comment via e-mail, please include your full U.S. mailing address so that you can be added to IDEM’s mailing list to receive notice of future action related to this permit. If you do not want to comment at this time, but would like to receive notice of future action related to this permit application, please contact IDEM at the address below. Please refer to permit numbers SSM 085-39391-00003 and SPM 085-39431-00003 in all correspondence.

Comments should be sent to:

Rithika Reddy
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGNC 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 4-9694
Or dial directly: (317) 234-9694
Fax: (317) 232-6749 attn: Rithika Reddy
E-mail: rreddy@idem.in.gov

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

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

What will happen after IDEM makes a decision?

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

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

[Signature]

Iryn Callilung, Section Chief
Permits Branch
Office of Air Quality
Mr. Michael Schall
Dalton Corporation, Warsaw Manufacturing Facility
1900 E. Jefferson Street
Warsaw, Indiana 46580

Re: 085-39391-00003
Significant Source Modification

Dear Mr. Schall:

Dalton Corporation, Warsaw Manufacturing Facility was issued Part 70 Operating Permit Renewal No. T085-30768-00003 on August 20, 2012 for a stationary gray iron foundry located at 1900 E. Jefferson Street, Warsaw, Indiana 46580. An application to modify the source was received on December 14, 2017. Pursuant to the provisions of 326 IAC 2-7-10.5, a Significant Source Modification is hereby approved as described in the attached Technical Support Document.

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

1. One (1) enclosed Pneumatic Sand Transporter #7, approved in 2018 for construction, for transferring sand from the East (E) Sand Silo to the Phenolic Urethane Core Sand Hopper #4
2. Phenolic Urethane Core Making Line #12
   - One (1) Phenolic Urethane Core Making Line #12, with a nominal sand throughput of 7.5 tons of sand per hour. The Phenolic Urethane Core Making Line #12 consists of the following emission units:
     - One (1) Core Sand Handling Process, with a nominal sand throughput of 7.5 tons of sand per hour:
       - One (1) Phenolic Urethane Core Sand Hopper #12, approved in 2018 for construction:
         - The particulate emissions from the Phenolic Urethane Core Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.
       - One (1) natural gas fired Phenolic Urethane Sand Heater #12, approved in 2018 for construction, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.
         - The natural gas emissions from the Phenolic Urethane Sand Heater #12 are not controlled.
         - The sand handling (non-natural gas) particulate emissions from the Phenolic Urethane Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.
       - One (1) Weigh Hopper #12, approved in 2018 for construction, with a nominal throughput capacity of 7.5 tons of sand per hour.
The particulate emissions from the Phenolic Urethane Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(b) One (1) Phenolic Urethane Core Sand Mixer #12, approved in 2018 for construction, with a nominal throughput of 7.5 tons of core sand per hour and 0.10 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #12 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #35, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #35 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #35.

(2) One (1) Phenolic Urethane Core Machine #36, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #36 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #36.

(3) One (1) Phenolic Urethane Core Machine #37, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #37 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #37.

The natural gas fired Core Oven #12 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

Emissions from the natural gas fired Core Oven #12 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

(3) One (1) core machine, identified as Core Machine #25, approved in 2018 for construction, with a maximum capacity of 7.0 tons per hour, using baghouse U as particulate control, and acid scrubber AF as VOC control, and exhausting to stack U.

This unit will replace the following permitted Core Machine #25:

One (1) Phenolic Urethane Core Machine #25, constructed in 1993, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of
sand. Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(4) Four (4) manual casting finishing stations, identified as Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, approved in 2018 for construction, each with a maximum capacity of 1.0 ton per hour, using a fabric filter for control, and exhausting to the indoors.

The following construction conditions are applicable to the proposed modification:

**General Construction Conditions**

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

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

**Effective Date of the Permit**

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

**Commenced Construction**

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

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

**Approval to Construct**

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

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

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

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

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5.
If you have any questions on this matter, please contact Rithika Reddy of my staff, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, or call at (800) 451-6027, and ask for Rithika Reddy or extension 4-9694 or dial (317) 234-9694.

Sincerely,

Iryn Calilung, Section Chief
Permits Branch
Office of Air Quality

Attachments: Significant Source Modification and Technical Support Document

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

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 subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17. This permit also addresses certain new source review requirements for new and/or existing equipment and is intended to fulfill the new source review procedures pursuant to 326 IAC 2-7-10.5, applicable to those conditions.

| Significant Source Modification No.: 085-39391-00003 |
| Master Agency Interest ID.: 11657 |

| Issued by: |
| Iryn Calilung, Section Chief |
| Permits Branch |
| Office of Air Quality |

| Issuance Date: |
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PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT
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Attachment C - 40 CFR 60, Subpart JJJJ - Standards of Performance for Stationary Spark Ignition Internal Combustion Engines
SECTION A  SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)][326 IAC 2-7-5(14)][326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary gray iron foundry.

<table>
<thead>
<tr>
<th>Source Address:</th>
<th>1900 E. Jefferson Street, Warsaw, Indiana 46580</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Source Phone Number:</td>
<td>(574) 267-8111</td>
</tr>
<tr>
<td>SIC Code:</td>
<td>3321 (Gray and Ductile Iron Foundry)</td>
</tr>
<tr>
<td>County Location:</td>
<td>Kosciusko</td>
</tr>
<tr>
<td>Source Location Status:</td>
<td>Attainment for all criteria pollutants</td>
</tr>
<tr>
<td>Source Status:</td>
<td>Part 70 Operating Permit Program</td>
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<tr>
<td></td>
<td>Major Source, under PSD Rules</td>
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<tr>
<td></td>
<td>Major Source, Section 112 of the Clean Air Act</td>
</tr>
<tr>
<td></td>
<td>1 of 28 Source Categories</td>
</tr>
</tbody>
</table>

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

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

SECTION D.1

(1) Cupola Charge Handling

Cupola Charge Handling operations, constructed prior to 1977, with a nominal charging capacity of 53.45 tons per hour of solid metal, coke, and limestone. The Cupola Melt Furnace is equipped with two (2) electric holding furnaces.

Emissions from the Cupola Charge Handling operations are uncontrolled.

SECTION D.2

(2) Cupola Melt Furnace

One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEEE compliance).

Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 5.0 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.
(3) **Hot Blast Preheater**

One natural gas fired Hot Blast Preheater, constructed in 1981, with a maximum heat input capacity of 22 million British thermal units (MMBtu) per hour for preheating the blast air for the Cupola Melt Furnace.

**SECTION D.3**

(4) **Herman 2 Mold Line**

(a) One (1) electric holding furnace, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour, with emissions captured, but uncontrolled, and exhausting to the general building ventilation system.

(b) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-19.

(c) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vents V-8 and V-9.

(d) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #3, exhausting through Stack B.

(e) One (1) Herman 2 Sand Handling process, constructed prior to 1977, modified in 2009, and approved for construction in 2013, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

and

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of one (1) Klein transport, constructed in 2009 and approved for modification in 2013, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y; and
SECTION D.4

(5) Herman 3 Mold Line

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(a) One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-10.

(b) One (1) Herman 3 Castings Cooling process, constructed in 1991, and modified in 2004, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled and exhausting to the atmosphere through Vent V-12.

(c) One (1) Herman 3 Shakeout process, constructed in 1991, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #1, exhausting to Stack D, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(d) One (1) Herman 3 Sand Handling process, constructed in 1991, modified in 2009, and approved for modification in 2013, with a nominal throughput of 165 tons of mold and core sand per hour.

The Herman 3 Sand Handling process includes:

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed in 1991, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D, Wet Collector #2, exhausting through Stack C, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(2) one (1) Return Sand Conveyor, constructed in 2009, identified as RSC1, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D.

and

(3) one (1) Return Sand Surge Bin, approved for construction in 2013, identified as RSSB-1, with particulate emissions captured by Wet Collector #2, which is a voluntary control, exhausting through Stack C.

(e) One (1) dust mixing acoustic reactor (DMAR) tank sand transport system, approved for construction in 2013, recycling dust collected in baghouses #1 and #11 to increase the concentration of solids being processed within the dust mixing acoustic reactor (DMAR) loop in order to increase the VOC reduction of the Sonoperoxone® system, with a maximum capacity of 1.45 tons of waste dust per hour, uncontrolled, and exhausting indoors.
SECTION D.5

(6) Inclined Shakeout and Sort System (servicing Herman 2 and Herman 3)
   (a) One (1) Inclined Shakeout and Sort System, constructed prior to 1977, with a nominal throughput of 48.5 tons of iron per hour, with particulate emissions captured and controlled by Baghouse #3, exhausting through Stack H.
   (b) One (1) Vibratory Shaker, identified as VB1, permitted in 2011, with a nominal capacity of 48.5 tons per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(7) Waste Sand Handling, Screening and Transport System (servicing Herman 2 and Herman 3)
One (1) Waste Sand Handling, Screening and Transport System, constructed prior to 1977, with a nominal throughput of 20 tons of waste sand per hour.

The Waste Sand Handling, Screening and Transport System consists of a rotary screen process, a magnetic separator, a silo, an elevated bin hopper, and a transport (Dependable) system.

Particulate emissions from the Waste Sand Handling, Screening and Transport system are captured and controlled by Baghouse #9, exhausting through Stack R.

SECTION D.6

(8) Shot Blast Machines
   (a) Five (5) Shot Blast Machines:
      (1) Three (3) Shot Blast Machines, identified as SB-1, SB-2, and SB-4, each constructed prior to 1977, each with a nominal capacity of 5.0 tons of iron castings per hour.
      (2) One (1) Shot Blast Machine, identified as SB-3, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.
      (3) One (1) Shot Blast Machine, permitted in 2006 and modified in 2011 to add a manual blow-off chamber, identified as SB-10, with a nominal capacity of 5 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines are captured and controlled by Baghouse #3, exhausting through Stack H.

Particulate emissions from the manual blow-off chamber for SB-10 are captured and controlled by a fabric filter control device exhausted internally.

   (b) Three (3) Shot Blast Machines:
      (1) One (1) Shot Blast Machine, identified as SB-5, constructed prior to 1977, with a nominal throughput of 5.0 tons of iron castings per hour.
      (2) One (1) Shot Blast Machine, identified as SB-6, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.
      (3) One (1) Shot Blast Machine, identified as SB-8, constructed in 1988, with a nominal throughput of 8.0 tons of iron castings per hour.
      (4) One (1) hose blast operation for Shot Blast #8, permitted in 2011, identified as...
HB1, with a nominal capacity of 8.0 tons of iron castings per hour.

Particulate emissions from these Shot Blast Machines and the hose blast operation are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) One (1) Shot Blast Machine, identified as SB-7, constructed in 1978 with a nominal throughput of 6.0 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) One (1) Shot Blast Machine, identified as SB-9, constructed in 1995 and approved for modification in 2013 by adding shot wheels, with a nominal throughput of 12.5 tons of iron castings per hour.

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #12, exhausting through Stack X.

9) **Grinders and Finishing Stations**

(a) Fourteen (14) Grinders:

(1) Twelve (12) Grinders, identified as GR-1 through GR-4, GR-9, GR-10, GR-29, and GR-30, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

(2) Two (2) robotic grinders, constructed in 2009, identified as:

(A) ABB, with a total nominal capacity of 1.0 tons of iron castings per hour, and

(B) FANUC, with a total nominal capacity of 1.5 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #15, exhausting through Stack AE.

(b) Six (6) Grinders, identified as GR-11 through GR-14, GR-16, and GR-17, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour, with particulate emissions from these Grinders are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) Eight (8) Grinders, identified as GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) Four (4) Grinders, identified as GR-31 through GR-33; and GR-37, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #12, exhausting through Stack X.
(e) Two (2) MAUS automatic grinders, identified as MAUS Grinders #1 and #2, approved in 2017 for construction, each with a nominal throughput of 3.0 tons of iron casting per hour, with particulate emissions captured and controlled by a shared box type fabric filter, exhausting internally.

(f) Four (4) manual casting finishing stations, identified as Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, approved in 2018 for construction, each with a maximum capacity of 1.0 ton per hour, using a common baghouse ZZ for control, and exhausting internally.

SECTION D.7

(11) Phenolic Urethane Core Making Line #9 (also referred to as Core Making Line #9)
One (1) Phenolic Urethane Core Making Line #9, constructed in 2002 as a hotbox process and modified in 2008 to be a phenolic process, with a nominal sand throughput of 18.0 tons of sand per hour. The Phenolic Urethane Core Making line #9 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 18.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Sand Hopper #9.

(3) One (1) Sand Hopper #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) electric Sand Heater #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Sand Mixer #9, constructed in 2002 and modified in 2008, with a nominal throughput of 18.0 tons of sand per hour.

Emissions from the Sand Mixer #9 are uncontrolled.

(c) Three (3) Core Machines, constructed in 2002 and modified in 2008, three (3) Core Wash Dip Tanks and one (1) natural gas fired Core Oven:

(1) One (1) Phenolic Urethane Core Machine #31 and its corresponding Core Wash Dip Tank #31 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #31 are uncontrolled.

Emissions from the Core Wash Dip Tank #31 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #32, and its corresponding Core Wash Dip Tank #32 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #32 are uncontrolled.

Emissions from the Core Wash Dip Tank #32 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #33, and its corresponding Core Wash
Dip Tank #33 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

Emissions from the Phenolic Urethane Core Machine #33 are uncontrolled.

Emissions from the Core Wash Dip Tank #33 are uncontrolled.

The one (1) natural gas fired Core Oven #10 has a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

(d) One (1) electric Phenolic Urethane Core Oven #5.

Emissions from the Phenolic Urethane Core Oven #5 are uncontrolled.

(e) One (1) natural gas fired Core Oven #11, constructed in 2011, has a maximum heat input capacity of 3.0 million British thermal units (MMBtu) per hour.

Emissions from the Phenolic Urethane Core Oven #11 are uncontrolled.

SECTION D.8

(12) Phenolic Urethane Core Making Line #1

One (1) Phenolic Urethane Core Making Line #1, approved for modification in 2013, with a nominal sand throughput of 15.0 tons of sand per hour. The Phenolic Urethane Core Making Line #1 consists of the following emission units:

(a) One (1) Core Sand Handling Process, approved for modification in 2013, with a nominal sand throughput of 15.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) electric Phenolic Urethane Sand Heater #1, constructed in 1989 and approved for modification in 2103, for heating sand, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #1, constructed in 1989 and approved for modification in 2013, with a nominal throughput of 15.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #1 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and three (3) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #15, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #15 and natural gas fired Core Oven #1, constructed in 1986, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from...
resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #15 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #16, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #16 and natural gas fired Core Oven #1, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #16 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #17, constructed in 1988, and its corresponding Core Wash Dip Tank #17 and natural gas fired Core Oven #17, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #17 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #18, constructed in 1989, and its corresponding Core Wash Dip Tank #18 and natural gas fired Core Oven #18, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #18 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #19, constructed in 1989, and its corresponding Core Wash Dip Tank #19 and natural gas fired Core Oven #19, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #19 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #1 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and Phenolic Urethane Core Machine #19 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(13) **Phenolic Urethane Core Making Line #2**

One (1) Phenolic Urethane Core Making Line #2, with a nominal sand throughput of 3.0 tons of sand per hour. The Phenolic Urethane Core Making Line #2 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 3.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent
to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #2, constructed in 1987, with a nominal throughput of 3.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #2 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and one (1) portable electric Core Oven

(1) One (1) Phenolic Urethane Core Machine #8, constructed in 1968, and its corresponding Core Wash Dip Tank #8 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #8 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #9, constructed in 1968, and its corresponding Core Wash Dip Tank #9 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #9 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #12, constructed in 1978, and its corresponding Core Wash Dip Tank #12 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #12 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #13, constructed in 1979, and its corresponding Core Wash Dip Tank #13 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #13 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #14, constructed in 1992, and its corresponding Core Wash Dip Tank #14 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #14 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.
The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(14) Phenolic Urethane Core Making Line #3

One (1) Phenolic Urethane Core Making Line #3, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #3 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #3, constructed in 1980.

The particulate emissions from the Phenolic Urethane Sand Heater #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #3, constructed in 1980, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #3 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #2, constructed in 1982, and its corresponding Core Wash Dip Tank #2 and natural gas fired Core Oven #3, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #2 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #4, constructed in 1981, and its corresponding Core Wash Dip Tank #4 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #4 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #5, constructed in 1968, and its
corresponding Core Wash Dip Tank #5 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #5 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #3 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(15) Phenolic Urethane Core Making Line #4

One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) East (E) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(3) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

(4) One (1) enclosed Pneumatic Sand Transporter #7, approved in 2018 for construction, for transferring sand from the East (E) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

(5) One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(6) One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:

The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #4, constructed in 1986, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #4 are uncontrolled.

(c) Two (2) Core Machines, one (1) Core Wash Dip Tank, and two (2) natural gas fired Core
Ovens

(1) One (1) Phenolic Urethane Core Machine #7, constructed in 1986 and modified to incorporate a larger blow plate in 2011, with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

(2) One (1) Phenolic Urethane Core Machine #25, constructed in 1993, approved in 2018 for replacement, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(A) The natural gas fired Core Oven #8 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

(B) The natural gas fired Core Oven #25 has a maximum heat input capacity of at 800,000 British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #7 and Phenolic Urethane Core Machine #25 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(7) One (1) Phenolic Urethane Core Sand Weigh Hopper #4, constructed in 1986.

(16) **Phenolic Urethane Core Making Line #5**

One (1) Phenolic Urethane Core Making Line #5, with a nominal sand throughput of 5.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #5 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.
(4) One (1) natural gas fired Phenolic Urethane Sand Heater #5, constructed in 1992, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #5 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #21, constructed in 1992, and its corresponding Core Wash Dip Tank #21 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #21 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #22, constructed in 1992, and its corresponding Core Wash Dip Tank #22 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #22 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #28, constructed in 1998, and its corresponding Core Wash Dip Tank #28 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #28 are uncontrolled.

The natural gas fired Core Oven #9 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(17) Phenolic Urethane Core Making Line #8

One (1) Phenolic Urethane Core Making Line #8, with a nominal sand throughput of 5.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #8 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane
Core Sand Hopper #8.

(3) One (1) Phenolic Urethane Core Sand Hopper #8, constructed in 1997:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #8 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #8, constructed in 1997, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #8 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #8, constructed in 1997, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #8 are uncontrolled.

c) Two (2) Core Machines, two (2) Core Wash Dip Tank, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #1, constructed in 1982, and its corresponding Core Wash Dip Tank #1 and natural gas fired Core Oven #27, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #1 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #27, constructed in 1996, and its corresponding Core Wash Dip Tank #27 and natural gas fired Core Oven #27, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #27 are uncontrolled.

The natural gas fired Core Oven #27 on Phenolic Urethane Core Making Line #8 has a maximum heat input capacity of 1.6 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of Phenolic Urethane Core Machine #1 and Phenolic Urethane Core Machine #27 are controlled by Acid Scrubber AF, exhausting through Stack AF.

SECTION D.9

(18) **Shell Core Making Process**

One (1) Shell Core Sand Making Process, with a nominal sand throughput of 0.8 tons of sand per hour. The Shell Core Sand Making Process consists of the following emission units:

(a) One (1) Shell Core Sand Handling Process, with a nominal sand throughput of 0.8 tons of
sand per hour:

(1) North (N) Shell Sand Silo and South (S) Shell Sand Silo, each constructed prior to 1977, with a capacity to provide coated sand to the two (2) Shell Core Sand Hoppers.

Emissions from the North (N) Shell Sand Silo and South (S) Shell Sand Silo are uncontrolled.

(2) Two (2) Shell Core Sand Hoppers, identified as Shell Core Sand Hopper #1 and Shell Core Sand Hopper #2, constructed prior to 1977, with a capacity to provide shell core sand to all Shell Core Machines.

Emissions from the Shell Core Sand Hoppers are uncontrolled.

(b) Three (3) Core Machines, and Three (3) Core Wash Dip Tanks

(1) One (1) Shell Core Machine #6, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #6, with a nominal throughput of 0.2 tons of sand per hour.

Emissions from the Shell Core Machine #6 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #6 are uncontrolled.

(2) One (1) Shell Core Machine #7, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #7, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #7 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #7 are uncontrolled.

(3) One (1) Shell Core Machine #8, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #8, with a nominal throughput of 0.3 tons of sand per hour.

Emissions from the Shell Core Machine #8 are uncontrolled.

Emissions from the Shell Core Wash Dip Tank #8 are uncontrolled.

SECTION D.10

(19) **Air Set Core Making Process**

One (1) Air Set Core Making Process, with a nominal sand throughput of 6.0 tons of sand per hour.

The Air Set Core Making Process consists of the following emission units:

(a) One (1) Air Set Core Sand Handling Process, with a nominal sand throughput of 6.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.
(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Air Set Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Air Set Core Sand Mixer #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.

Emissions from the Air Set Core Sand Mixer #2 are uncontrolled.

(c) One (1) Air Set Core Machine #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.

Emissions from the Air Set Core Machine #2 are uncontrolled.

SECTION D.11

(20) Large Core Production Cell

One (1) Large Core Production Cell (ID LCC), permitted in 2006, which will initially be utilized as a phenolic urethane cold box core making operation.

The Large Core Production Cell consists of the following emission units:

(a) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(b) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(c) One (1) Large Core Sand Weigh Hopper, permitted to be constructed in 2006, with a nominal throughput capacity of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Weigh Hopper are captured and controlled by Baghouse Q, exhausting through Stack Q.

(d) Large Core Production Cell Line #10, constructed in 2006, consisting of the following emission units:

(1) One (1) Sand / Resin Mixer #10, with a nominal throughput capacity of 15 tons of sand per hour and 34.18 pounds of resin per hour

Emissions from the Sand / Resin Mixer #10 are uncontrolled.

(2) One (1) Large Core Sand Holding Hopper #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Holding Hopper #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(3) One (1) electric Large Core Sand Heater #10, with a nominal sand throughput of
15 tons of sand per hour.

The particulate emissions from the Large Core Sand Heater #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) Cold Box Phenolic Urethane Core Machine #29, with a nominal throughput capacity of 7 tons of cores per hour, using a nominal of 2.75 pounds of catalyst per ton of core sand;

(A) Operating Scenario #1
The current operating scenario, Operating Scenario #1, will use Resin #1 and Catalyst #1. Resin #1 is a phenolic urethane resin. Catalyst #1 is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the Cold Box Phenolic Urethane Core Machine #29, when using Resin #1 and Catalyst #1, are captured at the core box and controlled by Acid Scrubber AF, exhausting through Stack AF. The Acid Scrubber AF is a voluntary control for this processes and cannot be used to demonstrate compliance with any applicable VOC emission limitations.

(B) Operating Scenario #2
Operating Scenario #2 will use Resin #2 and Catalyst #2. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(C) Operating Scenario #3
Operating Scenario #3 will use Resin #3 and Catalyst #3. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(5) One (1) Core Wash Dip Tank #29, with a nominal capacity of 15 tons of cores per hour and 20.408 pounds of core wash per ton of core sand.

Emissions from the Core Wash Dip Tank #29 are uncontrolled.

(e) One (1) natural gas fired Core Oven #29, with a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

Emissions from the natural gas fired Core Oven #29 are captured, but uncontrolled, and exhaust to Stack V-45.

SECTION D.12

(22) Phenolic Urethane Core Making Line #12

One (1) Phenolic Urethane Core Making Line #12, with a nominal sand throughput of 7.5 tons of sand per hour. The Phenolic Urethane Core Making Line #12 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.5 tons of sand per hour:

(1) One (1) Phenolic Urethane Core Sand Hopper #12, approved in 2018 for construction:
The particulate emissions from the Phenolic Urethane Core Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(2) One (1) natural gas fired Phenolic Urethane Sand Heater #12, approved in 2018 for construction, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The natural gas emissions from the Phenolic Urethane Sand Heater #12 are not controlled.

The sand handling (non-natural gas) particulate emissions from the Phenolic Urethane Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(3) One (1) Weigh Hopper #12, approved in 2018 for construction, with a nominal throughput capacity of 7.5 tons of sand per hour.

The particulate emissions from the Phenolic Urethane Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(b) One (1) Phenolic Urethane Core Sand Mixer #12, approved in 2018 for construction, with a nominal throughput of 7.5 tons of core sand per hour and 0.10 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #12 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #35, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #35 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #35.

(2) One (1) Phenolic Urethane Core Machine #36, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #36 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #36.

(3) One (1) Phenolic Urethane Core Machine #37, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #37 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #37.

The natural gas fired Core Oven #12 has a maximum heat input capacity
of 2.4 million British thermal units (Btu) per hour.

Emissions from the natural gas fired Core Oven #12 are uncontrolled.

The catalyst used is Dimethyisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

**SUMMARY OF COMMON CONTROL**

Wet Scrubber A
- Cupola Melt Furnace

Wet ESP
- Cupola Melt Furnace

Wet Collector #1 (Stack D) is common to:
- Herman 3 Sand Handling,
- Herman 3 Shakeout, and
- Herman 3 Return Sand Conveyor.

Wet Collector #2 (Stack C) is common to:
- Return Sand Surge Bin, and
- Herman 3 Sand Handling.

Wet Collector #3 (Stack B) is common to:
- Herman 2 Shakeout

Wet Collector #4 (Stack E) is common to:
- Herman 3 Shakeout, and
- Herman 3 Sand Handling.

The Sonoperoxone® system is common to:
- Herman 3 Pouring Station,
- Herman 3 Castings Cooling,
- Herman 3 Shakeout, and
- Herman 3 Sand Handling.

Baghouse #1 (Stack F)
- Herman 2 Sand Handling

Baghouse #2 (Stack G) is common to:
- Inclined Shakeout and Sort System, and
- Vibratory Shaker.

Baghouse #3 (Stack H) is common to:
- Shot Blast Machines SB-1 through SB-4, and
- Shot Blast Machine SB-10.

Baghouse #6 (Stack K) is common to:
- Shot Blast Machine SB-7,
- Grinders GR-19 and GR-20,
- Grinder GR-23,
- Grinders GR-25 and GR-26, and
- Grinders GR-34 through GR-36.
Baghouse #9 (Stack R) is common to:
- Waste Sand Handling, Screening and Transport System

Baghouse #11 (Stack W) is common to:
- Herman 3 Shakeout, and
- Herman 3 Sand Handling.

The Baghouse #12 (Stack X) is common to:
- Shot Blast Machine SB-9,  
- Grinders GR-31 through GR-33, and  
- Grinder GR-37.

Baghouse #13 (Stack Y) is common to:
- Herman 2 Sand Handling, and  
- Klein Transport PF504-5.

Baghouse #14 (Stack AD)  
- Cupola Charge Door

The Baghouse #15 (Stack AE) is common to:
- Grinders GR-1 through GR-4,  
- Grinders GR-9 and GR-10,  
- Grinders GR-29 and GR-30, and  
- Grinders ABB and FANUC.

Baghouse #16 (Stack AG) is common to:
- Shot Blast Machines SB-5 and SB-6,  
- Shot Blast Machine SB-8,  
- Hose Blast System for SB-8,  
- Grinders GR-11 through GR-14, and  
- Grinders GR-16 and GR-17.

Baghouse Q (Stack Q) is common to:
- Phenolic Urethane Core Sand Hopper #1,  
- Phenolic Urethane Sand Heater #1,  
- Large Core Sand Weigh Hopper,  
- Large Core Sand Holding Hopper #10, and  
- Large Core Sand Heater #10.

Baghouse U (Stack U) is common to:
- Phenolic Urethane Core Sand Hoppers #3 and #4,  
- Phenolic Urethane Sand Heaters #3 and #4, and  
- Air Set Core Sand Hopper #3.

Baghouse T (Stack T) is common to:
- Phenolic Urethane Core Sand Hopper #12,  
- Phenolic Urethane Sand Heater #12, and  
- Phenolic Urethane Weigh Hopper #12.

Baghouse Z (Stack Z) is common to:
- Sand Hopper #9,  
- Sand Heater #9,  
- Phenolic Urethane Core Sand Hopper #8,  
- Phenolic Urethane Sand Heater #5, and  
- Phenolic Urethane Sand Heater #8.
Acid Scrubber AF (Stack AF) is common to:
- Phenolic Urethane Core Machines #1 and #2,
- Phenolic Urethane Core Machines #4 and #5,
- Phenolic Urethane Core Machines #7 through #9,
- Phenolic Urethane Core Machines #12 through #19,
- Phenolic Urethane Core Machines #21 and #22,
- Phenolic Urethane Core Machine #25,
- Phenolic Urethane Core Machines #27 through #29 and
- Phenolic Urethane Core Machines #31 through #33.

SUMMARY OF COMMON EQUIPMENT

Pneumatic Sand Transporter #1 is common to:
- Northeast (NE) Sand Silo,
- Phenolic Urethane Core Making Line #9,
- Phenolic Urethane Core Making Line #8, and
- Large Core Production Cell Line #10.

Pneumatic Sand Transporter #2 is common to:
- South (S) Sand Silo,
- Phenolic Urethane Core Making Lines #1 through #5, and
- Air Set Core Making Process.

Pneumatic Sand Transporter #7 is common to:
- East (E) Sand Silo,
- Phenolic Urethane Core Making Line #4,

The Northeast (NE) Sand Silo is common to:
- Pneumatic Sand Transporter #1,
- Phenolic Urethane Core Making Line #9,
- Phenolic Urethane Core Making Line #8, and
- Large Core Production Cell Line #10.

The South (S) Sand Silo is common to:
- Pneumatic Sand Transporter #2,
- Phenolic Urethane Core Making Lines #1 through #5, and
- Air Set Core Making Process.

The East (E) Sand Silo is common to:
- Pneumatic Sand Transporter #7,
- Phenolic Urethane Core Making Lines #4

The Phenolic Urethane Core Sand Hopper #1 is common to:
- Phenolic Urethane Core Making Lines #1 and #2.

The Phenolic Urethane Core Sand Hopper #3 is common to:
- Phenolic Urethane Core Making Lines #3 and #5, and
- Air Set Core Making Process.

The natural gas fired Core Oven #1 is common to:
- Phenolic Urethane Core Machines #15 and #16.

The natural gas fired Core Oven #2 is common to:
- Phenolic Urethane Core Machines #18 and #19.
The natural gas fired Core Oven #4 is common to:
- Phenolic Urethane Core Machines #4 and #5.

The natural gas fired Core Oven #9 is common to:
- Phenolic Urethane Core Machines #21, #22, and #28.

The natural gas fired Core Oven #27 is common to:
- Phenolic Urethane Core Machines #1 and #27.

The natural gas fired Core Oven #12 is common to:
- Phenolic Urethane Core Machines #35, #36 and #37.

The portable electric Core Oven #1 is common to:
- Phenolic Urethane Core Machines #8, #9, and #12 through #14.

A.3 Specifically Regulated Insignificant Activities

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

1. Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6. [326 IAC 6-3-2]

2. The following equipment related to manufacturing activities no resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6-3-2]

3. Cutting 200,000 linear feet or less than one (1") plate or equivalent. [326 IAC 6-3-2]

4. One (1) diesel fired emergency generator, constructed in 1968, with a maximum power output rate of 170 horsepower.

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

5. One (1) gasoline generator, powering a portable maintenance welder, constructed in 2004, with a maximum power output rate of 23 horsepower.

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

6. One (1) gasoline generator, powering a portable maintenance welder, constructed in 2011, with a maximum power output rate of 23 horsepower.

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

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 CONDITIONS

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

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

B.2 Permit Term [326 IAC 2-7-5(2)][326 IAC 2-1.1-9.5][326 IAC 2-7-4(a)(1)(D)][IC 13-15-3-6(a)]

(a) This permit, T085-30768-00003, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

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

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7][IC 13-17-12]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

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

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

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U.S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.
B.8 Certification [326 IAC 2-7-4(f)][326 IAC 2-7-6(1)][326 IAC 2-7-5(3)(C)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-7-6(1) if:

(1) it contains a certification by a "responsible official" as defined by 326 IAC 2-7-1(35), and

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

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

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

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

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

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

and

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

(b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and

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

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

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

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

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

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

The Permittee shall implement the PMPs.

(b) If required by specific condition(s) in Section D of this permit where no PMP was previously required, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

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

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

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

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

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

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

The Permittee shall implement the PMPs.

(c) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).
(d) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

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

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

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

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

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

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

   Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
   Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
   Facsimile Number: 317-233-6865
   Northern Regional Office phone: (574) 245-4870; fax: (574) 245-4877.

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

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

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

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

   (A) A description of the emergency;

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

   (C) Corrective actions taken.
The notification which shall be submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

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

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

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

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(8) be revised in response to an emergency.

(f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.

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

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

(a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed compliance with any applicable requirements as of the date of permit issuance, provided that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

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

(b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.

(c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the
permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.

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

1. The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;

2. The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;

3. The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and

4. The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.

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

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

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

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

(a) All terms and conditions of permits established prior to T085-30768-00003 and issued pursuant to permitting programs approved into the state implementation plan have been either:

1. incorporated as originally stated,

2. revised under 326 IAC 2-7-10.5, or

3. deleted under 326 IAC 2-7-10.5.

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

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

The Permittee’s right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

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

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

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

1. That this permit contains a material mistake.
2. That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
3. That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

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

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

Request for renewal shall be submitted to:

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

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

1. Submitted at least nine (9) months prior to the date of the expiration of this permit; and
2. If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source’s failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the
deadline specified, pursuant to 326 IAC 2-7-4(a)(2)(D), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

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

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

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

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

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

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

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

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

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

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

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b) or (c) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

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

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

(b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:

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

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

(c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).

(d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.
B.20 Source Modification Requirement [326 IAC 2-7-10.5]

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

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

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

(a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

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

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

(a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

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

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

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]
B.23 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.

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

B.24 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314] [326 IAC 1-1-6]

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

### Entire Source

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

**C.1** Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]**

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

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

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

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

**C.3** Open Burning  [326 IAC 4-1] [IC 13-17-9]**

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

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

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

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

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

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

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted. The provisions of 326 IAC 1-7-1(3), 326 IAC 1-7-2, 326 IAC 1-7-3(c) and (d), 326 IAC 1-7-4, and 326 IAC 1-7-5(a), (b), and (d) are not federally enforceable.
C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

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

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

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

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

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

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

All required notifications shall be submitted to:

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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

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

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

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

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements  [326 IAC 2-1.1-11]

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

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

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

C.10 Compliance Monitoring [326 IAC 2-7-5(3)][326 IAC 2-7-6(1)][40 CFR 64][326 IAC 3-8]

(a) Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:
Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

(b) For monitoring required by CAM, at all times, the Permittee shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

(c) For monitoring required by CAM, except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the Permittee shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

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

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

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

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

C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]
Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):
(a) The Permittee shall maintain the most recently submitted written emergency reduction plans (ERPs) consistent with safe operating procedures.

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

C.13 Risk Management Plan [326 IAC 2-7-5(11)] [40 CFR 68]
If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6] [40 CFR 64] [326 IAC 3-8]

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

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

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

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

(II) CAM Response to excursions or exceedances.

(a) Upon detecting an excursion or exceedance, subject to CAM, the Permittee shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its
normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

(2) Determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

(b) If the Permittee identifies a failure to achieve compliance with an emission limitation, subject to CAM, or standard, subject to CAM, for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the Permittee shall promptly notify the IDEM, OAQ and, if necessary, submit a proposed permit modification to this permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

(c) Based on the results of a determination made under paragraph (II)(a)(2) of this condition, the EPA or IDEM, OAQ may require the Permittee to develop and implement a QIP. The Permittee shall develop and implement a QIP if notified to in writing by the EPA or IDEM, OAQ.

(d) Elements of a QIP: The Permittee shall maintain a written QIP, if required, and have it available for inspection. The plan shall conform to 40 CFR 64.8 b (2).

(e) If a QIP is required, the Permittee shall develop and implement a QIP as expeditiously as practicable and shall notify the IDEM, OAQ if the period for completing the improvements contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

(f) Following implementation of a QIP, upon any subsequent determination pursuant to paragraph (II)(a)(2) of this condition the EPA or the IDEM, OAQ may require that the Permittee make reasonable changes to the QIP if the QIP is found to have:

(1) Failed to address the cause of the control device performance problems; or

(2) Failed to provide adequate procedures for correcting control device
performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

(g) Implementation of a QIP shall not excuse the Permittee from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

(h) CAM recordkeeping requirements.

(1) The Permittee shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to paragraph (II)(c), (d), (e), (f), and (g) of this condition and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this condition (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions). Section C - General Record Keeping Requirements of this permit contains the Permittee's obligations with regard to the records required by this condition.

(2) Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

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

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline.

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

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35).
Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

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

Pursuant to 326 IAC 2-6-3(a)(1), the Permittee shall submit by July 1 of each year an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the following requirements:

1. Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
2. Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) (“Regulated pollutant, which is used only for purposes of Section 19 of this rule”) from the source, for purpose of fee assessment.

The statement must be submitted to:
Indiana Department of Environmental Management
Technical Support and Modeling Section, Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

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

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

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. Support information includes the following, where applicable:

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

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

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

These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

(b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.
(c) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A), 326 IAC 2-2-8 (b)(6)(B), 326 IAC 2-3-2 (l)(6)(A), and/or 326 IAC 2-3-2 (l)(6)(B)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

1. Before beginning actual construction of the “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, document and maintain the following records:
   
   A description of the project.
   
   Identification of any emissions unit whose emissions of a regulated new source review pollutant could be affected by the project.
   
   A description of the applicability test used to determine that the project is not a major modification for any regulated NSR pollutant, including:
   
   - Baseline actual emissions;
   - Projected actual emissions;
   - Amount of emissions excluded under section 326 IAC 2-2-1(pp)(2)(A)(iii) and/or 326 IAC 2-3-1 (kk)(2)(A)(iii); and
   - An explanation for why the amount was excluded, and any netting calculations, if applicable.

(d) If there is a reasonable possibility (as defined in 326 IAC 2-2-8 (b)(6)(A) and/or 326 IAC 2-3-2 (l)(6)(A)) that a “project” (as defined in 326 IAC 2-2-1(oo) and/or 326 IAC 2-3-1(jj)) at an existing emissions unit, other than projects at a source with a Plantwide Applicability Limitation (PAL), which is not part of a “major modification” (as defined in 326 IAC 2-2-1(dd) and/or 326 IAC 2-3-1(y)) may result in significant emissions increase and the Permittee elects to utilize the “projected actual emissions” (as defined in 326 IAC 2-2-1(pp) and/or 326 IAC 2-3-1(kk)), the Permittee shall comply with following:

1. Monitor the emissions of any regulated NSR pollutant that could increase as a result of the project and that is emitted by any existing emissions unit identified in (1)(B) above; and

2. Calculate and maintain a record of the annual emissions, in tons per year on a calendar year basis, for a period of five (5) years following resumption of regular operations after the change, or for a period of ten (10) years following resumption of regular operations after the change if the project increases the design capacity of or the potential to emit that regulated NSR pollutant at the emissions unit.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11] [326 IAC 2-2] [326 IAC 2-3] [40 CFR 64] [326 IAC 3-8]

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

On and after the date by which the Permittee must use monitoring that meets the requirements of 40 CFR Part 64 and 326 IAC 3-8, the Permittee shall submit CAM reports to the IDEM, OAQ.

A report for monitoring under 40 CFR Part 64 and 326 IAC 3-8 shall include, at a minimum, the information required under paragraph (a) of this condition and the following information, as applicable:

(1) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(2) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(3) A description of the actions taken to implement a QIP during the reporting period as specified in Section C-Response to Excursions or Exceedances. Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

The Permittee may combine the Quarterly Deviation and Compliance Monitoring Report and a report pursuant to 40 CFR 64 and 326 IAC 3-8.

(b) The address for report submittal is:

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

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

(d) Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.
(e) If the Permittee is required to comply with the recordkeeping provisions of (d) in Section C - General Record Keeping Requirements for any “project” (as defined in 326 IAC 2-2-1 (oo) and/or 326 IAC 2-3-1 (jj)) at an existing emissions unit, and the project meets the following criteria, then the Permittee shall submit a report to IDEM, OAQ:

(1) The annual emissions, in tons per year, from the project identified in (c)(1) in Section C - General Record Keeping Requirements exceed the baseline actual emissions, as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(i), by a significant amount, as defined in 326 IAC 2-2-1 (ww) and/or 326 IAC 2-3-1 (pp), for that regulated NSR pollutant, and

(2) The emissions differ from the preconstruction projection as documented and maintained under Section C - General Record Keeping Requirements (c)(1)(C)(ii).

(f) The report for project at an existing emissions unit shall be submitted no later than sixty (60) days after the end of the year and contain the following:

(1) The name, address, and telephone number of the major stationary source.

(2) The annual emissions calculated in accordance with (d)(1) and (2) in Section C - General Record Keeping Requirements.

(3) The emissions calculated under the actual-to-projected actual test stated in 326 IAC 2-2-2(d)(3) and/or 326 IAC 2-3-2(c)(3).

(4) Any other information that the Permittee wishes to include in this report such as an explanation as to why the emissions differ from the preconstruction projection.

Reports required in this part shall be submitted to:

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

(g) The Permittee shall make the information required to be documented and maintained in accordance with (c) in Section C - General Record Keeping Requirements available for review upon a request for inspection by IDEM, OAQ. The general public may request this information from the IDEM, OAQ under 326 IAC 17.1.

**Stratospheric Ozone Protection**

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

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

Emissions Unit Description:

(1) **Cupola Charge Handling**

Cupola Charge Handling operations, constructed prior to 1977, with a nominal charging capacity of 53.45 tons per hour of solid metal, coke, and limestone.

Emissions from the Cupola Charge Handling operations are uncontrolled.

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

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

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

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

**Metal Charge Limit**

(a) The amount of metal charged in the Cupola Charge Handling shall be limited to 199,194 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

**Cupola Charge Handling**

(b) The PM emissions from the Cupola Charge Handling shall be limited to 0.6 pounds per ton of metal charged.

(c) The PM$_{10}$ emissions from the Cupola Charge Handling shall be limited to 0.36 pounds per ton of metal charged.

(d) The lead emissions from the Cupola Charge Handling shall be limited to 0.002 pounds per ton of metal charged.

Compliance with these limits and the limits specified in Conditions D.2.1, D.3.1, D.5.1, D.6.1 and D.8.2(b) will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

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

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the Cupola Charge Handling shall not exceed 45.20 pounds per hour when operating at a process weight rate of 53.45 tons of metal melted per hour.

The pounds per hour limitation was 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.
Record Keeping and Reporting Requirement [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

D.1.3 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.1 – PSD Minor Limits, the Permittee shall maintain records of the amount of metal charged each month in the Cupola Charge Handling.

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

D.1.4 Reporting Requirements

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

Facility Description [326 IAC 2-7-5(14)]

(2) **Cupola Melt Furnace**

One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour. The Cupola Melt Furnace is equipped with two (2) electric holding furnaces.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEE compliance).

Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 5 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.

(3) **Hot Blast Preheater**

One natural gas fired Hot Blast Preheater, constructed in 1981, with a maximum heat input capacity of 22 million British thermal units (MMBtu) per hour for preheating the blast air for the Cupola Melt Furnace.

(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.2.1 **PSD Minor Limits [326 IAC 2-2]**

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

**Metal Melted Limit**

(a) The amount of metal melted in the Cupola Melt Furnace shall be limited to 152,078 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

**Cupola Melt Furnace**

(b) The PM emissions from the Cupola Melt Furnace shall be limited to 0.821 pounds per ton of metal.

(c) The PM$_{10}$ emissions from the Cupola Melt Furnace shall be limited to 0.738 pounds per ton of metal.

(d) The SO$_2$ emissions from the Cupola Melt Furnace shall be limited to 1.25 pounds per ton of metal.

(e) The NO$_X$ emissions from the Cupola Melt Furnace shall be limited to 0.42 pounds per ton
of metal.

(f) The VOC emissions from the Cupola Melt Furnace shall be limited to 0.07 pounds per ton of metal.

(g) The CO emissions from the Cupola Melt Furnace shall be limited to 7.250 pounds per ton of metal.

(h) The Lead emissions from the Cupola Melt Furnace shall be limited to 0.002 pounds per ton of metal.

These limitations for the Cupola Melt Furnace are for Stack A and Stack AD combined.

Compliance with the limits above and the limits specified in Conditions D.1.1, D.3.1, D.5.1(a) & (b), D.6.1 and D.7.2 will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

D.2.2 Particulate Emission Limitation [326 IAC 11-1-2]

Pursuant to 326 IAC 11-1-2, the allowable particulate emission rate from the Cupola Melt Furnace shall not exceed the values listed in the table below when operating at the corresponding process weight rate:

<table>
<thead>
<tr>
<th>Process Weight Rate (lbs/hr)</th>
<th>Allowable Emission of Particulate Matter (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>3.05</td>
</tr>
<tr>
<td>2,000</td>
<td>4.70</td>
</tr>
<tr>
<td>3,000</td>
<td>6.35</td>
</tr>
<tr>
<td>4,000</td>
<td>8.00</td>
</tr>
<tr>
<td>5,000</td>
<td>9.65</td>
</tr>
<tr>
<td>6,000</td>
<td>11.30</td>
</tr>
<tr>
<td>7,000</td>
<td>12.90</td>
</tr>
<tr>
<td>8,000</td>
<td>14.00</td>
</tr>
<tr>
<td>9,000</td>
<td>15.50</td>
</tr>
<tr>
<td>10,000</td>
<td>16.65</td>
</tr>
<tr>
<td>12,000</td>
<td>18.70</td>
</tr>
<tr>
<td>16,000</td>
<td>21.60</td>
</tr>
<tr>
<td>18,000</td>
<td>22.80</td>
</tr>
<tr>
<td>20,000</td>
<td>24.00</td>
</tr>
<tr>
<td>30,000</td>
<td>30.00</td>
</tr>
<tr>
<td>40,000</td>
<td>36.00</td>
</tr>
<tr>
<td>50,000</td>
<td>42.00</td>
</tr>
<tr>
<td>60,000</td>
<td>48.00</td>
</tr>
<tr>
<td>70,000</td>
<td>49.00</td>
</tr>
<tr>
<td>80,000</td>
<td>50.50</td>
</tr>
<tr>
<td>90,000</td>
<td>51.60</td>
</tr>
<tr>
<td>100,000</td>
<td>52.60</td>
</tr>
</tbody>
</table>

D.2.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.
Compliance Determination Requirements

D.2.4 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Wet Scrubber A – Cupola Melt Furnace
   The Wet Scrubber A for particulate emissions control shall be in operation and control
   emissions from the Cupola Melt Furnace at all times when:
   (1) the Cupola Melt Furnace is in operation, and
   (2) during startup of the Cupola Melt Furnace.

(b) Baghouse #14 – Charge Door
   (1) The Baghouse #14 for particulate emissions control shall be in operation and control
   fugitive particulate emissions from the charge door when the Cupola Melt Furnace is in operation.
   (2) In the event that bag failure is observed in a multi-compartment baghouse, if
   operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

(c) Afterburners – Cupola Melt Furnace
   The afterburner system shall be in operation for CO emissions control from the Cupola Melt Furnace at all times when:
   (1) the Cupola Melt Furnace is in operation, and
   (2) during startup of the Cupola Melt Furnace.

D.2.5 Testing Requirements [326 IAC 2-7-6(1), (6)]

(a) The Permittee shall perform PM testing on the Cupola Melt Furnace in order to demonstrate compliance with Conditions D.2.1(b) and D.2.2.

(b) In order to demonstrate the compliance status with Condition D.2.1(c), the Permittee shall perform emissions testing to determine PM\textsubscript{10} emissions from the Cupola Melt Furnace. PM\textsubscript{10} includes filterable and condensable PM.

(c) The Permittee shall perform VOC testing on Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(f).

(d) The Permittee shall perform CO testing on Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(g).

(e) The Permittee shall perform Pb testing on Cupola Melt Furnace in order to demonstrate compliance with Condition D.2.1(h).

(f) Testing shall be conducted utilizing methods as approved by the Commissioner. Testing of PM, PM\textsubscript{10}, VOC, CO and Pb, shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.
D.2.6 Scrubber Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

D.2.7 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.2.8 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Wet Scrubber A exhaust (Stack A), and
(2) Baghouse #14 exhaust (Stack AD)

shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.
D.2.9 Cupola Melt Furnace Temperature Monitoring [40 CFR 64]

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the Cupola Melt Furnace for measuring the temperature of the Cupola Melt Furnace gas stream. For the purposes of this condition, continuous shall mean no less than once every fifteen (15) minutes. The output of this system shall be recorded as a three (3) hour average. The Permittee shall maintain the cupola gas stream at or above 1300°F or the three (3) hour average temperature established during the most recent valid stack test. The Permittee shall take appropriate response steps whenever the temperature of the cupola gas stream is below 1300°F or the three (3) hour average established during the most recent valid stack test. A three (3) hour average temperature that is below the minimum established during the latest stack test is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

(b) The Permittee shall determine the three (3) hour average temperature from the most recent valid stack test that demonstrates compliance with the limits in Condition D.2.1 – PSD Minor Limits.

(c) On and after the date the stack test results are available, the Permittee shall maintain the cupola gas stream at or above the three (3) hour average temperature established during the compliant stack test.

(d) This minimum temperature requirement applies at all times during cupola operation, except for the following:

   (1) periods when the Cupola Melt Furnace blast air is turned off;

   (2) periods when the blast air has been turned on for less than 30 consecutive minutes; and

   (3) during the last 30 minutes of operation of the Cupola Melt Furnace.

The Permittee shall monitor the times that the Cupola Melt Furnace blast air is turned on and off.

D.2.10 Scrubber Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the pressure drop and flow rate of the Wet Scrubber A, at least once per day when the Cupola Melt Furnace is in operation.

   (1) When for any one reading, the pressure drop across Wet Scrubber A is below a minimum of 34 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

   (2) When for any one reading, the flow rate across Wet Scrubber A is below a minimum of 225 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

A pressure reading or flow rate that is below the above mentioned minimum is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(b) The instruments used for determining the pressure and flow rate shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.
D.2.11 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the pressure drop across the Baghouse #14, at least once per day when the associated process is in operation. When for any one reading, the pressure drop across the baghouses is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #14 is a pressure drop range between 3.0 and 9.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

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

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

D.2.12 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.1(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of metal melted in the Cupola Melt Furnace.

(b) To document the compliance status with Condition D.2.8 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the wet scrubber A and baghouse #14 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) To document the compliance status with Condition D.2.9 – Cupola Melt Furnace Temperature Monitoring, the Permittee shall maintain records of the continuous temperature readings of the Cupola Melt Furnace gas stream and make such records available upon request to IDEM, OAQ.

(d) To document the compliance status with Condition D.2.10 – Scrubber Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop and flow rate reading across wet scrubber A. The Permittee shall include in its daily record when a pressure drop and flow rate reading are not taken and the reason for the lack of a pressure drop and flow rate readings, (e.g. the process did not operate that day).

(e) To document the compliance status with Condition D.2.11 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #14. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

(f) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.
D.2.13 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.2.1(a) – PSD Minor Limits, shall be submitted using the reporting forms located at the end of this permit, or the equivalent, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
SECTION D.3 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]

(4) Herman 2 Mold Line

(a) One (1) electric holding furnace, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour, with emissions captured, but uncontrolled, and exhausting to the general building ventilation system.

(b) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-19.

(c) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vents V-8 and V-9.

(d) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #3, exhausting through Stack B.

(e) One (1) Herman 2 Sand Handling process, constructed prior to 1977, modified in 2009, and approved for modification in 2013, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of one (1) Klein transport, constructed in 2009 and approved for modification in 2013, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y; and

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)
D.3.1 PSD Minor Limits [326 IAC 2-2]

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

(a) Sand Limit

The combined amount of core and mold sand handled for the:

(1) Herman 2 Sand Handling, and

(2) Herman 3 Sand Handling

shall be limited to 912,470 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This core and mold sand limitation is for the Herman 2 and Herman 3 Sand Handling combined.

(b) Herman 2 Pouring (V-19)

(1) The PM emissions from the Herman 2 Pouring shall be limited to 0.18 pounds per ton of metal.

(2) The PM_{10} emissions from the Herman 2 Pouring shall be limited to 0.19 pounds per ton of metal.

(3) The VOC emissions from the Herman 2 Pouring shall be limited to 0.44 pounds per ton of metal.

(4) The Lead emissions from the Herman 2 Pouring shall be limited to 0.016 pounds per ton of metal.

(c) Herman 2 Castings Cooling (V-8 and V-9)

(1) The PM emissions from the Herman 2 Castings Cooling shall be limited to 0.39 pounds per ton of metal.

(2) The PM_{10} emissions from the Herman 2 Castings Cooling shall be limited to 0.4 pounds per ton of metal.

(3) The VOC emissions from the Herman 2 Castings Cooling shall be limited to 2.1 pounds per ton of metal.

These limitations for the Herman 2 Castings Cooling are for vents V-8 and V-9 combined.

(d) Herman 2 Shakeout (Stack B)

(1) The PM emissions from the Herman 2 Shakeout shall be limited to 0.05 pounds per ton of metal and sand.

(2) The PM_{10} emissions from the Herman 2 Shakeout shall be limited to 0.058 pounds per ton of metal and sand.

(3) The VOC emissions from the Herman 2 Shakeout shall be limited to 0.031
pounds per ton of metal and sand.

(4) The lead emissions from the Herman 2 Shakeout shall be limited to 0.00018 pounds per ton of metal.

(e) Herman 2 Sand Handling (Stack F and Stack Y)

(1) The PM emissions from the Herman 2 Sand Handling shall be limited to 0.05 pounds per ton of metal and sand.

(2) The PM$_{10}$ emissions from the Herman 2 Sand Handling shall be limited to 0.058 pounds per ton of metal and sand.

(3) The VOC emissions from the Herman 2 Sand Handling shall be limited to 0.031 pounds per ton of metal and sand.

(4) The lead emissions from the Herman 2 Sand Handling shall be limited to 0.00018 pounds per ton of metal.

These limitations for the Herman 2 Sand Handling are for Stack F and Stack Y combined.

Compliance with the limits above and the limits specified in Conditions D.1.1, D.2.1, D.5.1(a) & (b), D.6.1 and D.7.2 will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

D.3.2 PSD Minor Limits [326 IAC 2-2]

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

(a) The PM emissions from the Klein transport shall be limited to 0.356 pounds per ton of sand.

(b) The PM$_{10}$ emissions from the Klein transport shall be limited to 0.214 pounds per ton of sand.

(c) The amount of waste sand handled for the Klein transport shall be limited to 106,000 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

Compliance with the limits above and the limits specified in Conditions D.4.2(h) and D.6.1.3 will restrict the potential to emit from the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders to less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM$_{10}$ per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders, including the unrestricted PTE of the ‘fugitive’ emissions from these emission units.
D.3.3 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herman 2 Pouring (V-19)</td>
<td>203</td>
<td>58.7</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 2 Castings Cooling (V-8 and V-9)</td>
<td>203</td>
<td>58.7</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 2 Shakeout (Wet Collector #3, Stack B)</td>
<td>203</td>
<td>58.7</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 2 Sand Handling (Baghouse #1, Stack F, and Baghouse #13, Stack Y)</td>
<td>166</td>
<td>56.5</td>
<td>(b)</td>
</tr>
<tr>
<td>Klein Transport (Waste Sand Handling)</td>
<td>12.0</td>
<td>4.9</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 P^{0.67} \]

where \( E \) = rate of emission in pounds per hour and \( P \) = process weight rate in tons per hour.

(b) 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.

D.3.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.3.5 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Wet Collector #3

The Wet Collector #3 for particulate emissions control shall be in operation and control emissions from the Herman 2 Shakeout at all times when this processes is in operation.

(b) Baghouse #1

The Baghouse #1 for particulate emissions control shall be in operation and control emissions from the Herman 2 Sand Handling at all times when the Herman 2 Sand Handling is in operation.

(c) Baghouse #13

The Baghouse #13 for particulate emissions control shall be in operation and control emissions from the Herman 2 Sand Handling at all times when the Herman 2 Sand Handling is in operation.

(d) In the event that bag failure is observed in a multi-compartment baghouse, if operations
will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.3.6 Testing Requirements [326 IAC 2-7-6(1), (6)]

(a) PM

The Permittee shall perform PM testing on the:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B),
(D) Herman 2 Sand Handling (Stack F and Stack Y), and
(E) Herman 2 Waste Sand Handling System (Stack Y)

in order to demonstrate the compliance status with paragraphs (b)(1), (c)(1), (d)(1), and (e)(1) of Condition D.3.1, Condition D.3.2(a)(1), and Condition D.3.3.

(b) PM10

In order to demonstrate the compliance status with paragraphs (b)(2), (c)(2), (d)(2), and (e)(2) of Condition D.3.1 and Condition D.3.2(b)(2), the Permittee shall perform emissions testing to determine the PM10 emissions from the stack exhaust for:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B),
(D) Herman 2 Sand Handling (Stack F and Stack Y), and
(E) Herman 2 Waste Sand Handling System (Stack Y)

PM10 includes filterable and condensable PM.

(c) VOC

The Permittee shall perform VOC testing on the:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B), and
(D) Herman 2 Sand Handling (Stack F and Stack Y)

in order to demonstrate the compliance status with paragraphs (b)(3), (c)(3), (d)(3), and (e)(3), of Condition D.3.1.

(d) Lead (Pb)

The Permittee shall perform Pb testing on the:

(A) Herman 2 Pouring (V-19),
(B) Herman 2 Castings Cooling (V-8 and V-9),
(C) Herman 2 Shakeout (Stack B), and
(D) Herman 2 Sand Handling (Stack F and Stack Y)

in order to demonstrate the compliance status with paragraphs (b)(4), (d)(4), and (e)(4),
of Condition D.3.1.

(e) Testing shall be conducted utilizing methods as approved by the Commissioner. Testing of PM, PM$_{10}$, VOC and Pb, shall be repeated at least once every five (5) years from the date of the last valid compliance demonstration.

Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee’s obligations with regard to the testing required by this condition.

NOTE: Herman 2 and Herman 3 testing shall be performed alternatively, that is if Herman 2 testing for pollutants PM, PM$_{10}$, VOC, and Pb are performed in the first five (5) year cycle, Herman 3 testing for pollutants PM, PM$_{10}$, VOC, CO, and Pb shall be performed in the next five (5) year testing cycle.

D.3.7 Wet Collector Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In the event that wet collector failure has been observed, the failed wet collector and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

D.3.8 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.3.9 Visible Emissions Notations [40 CFR 64]

Visible Emission Notations:

(a) Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, visible emission notations of the:

(A) Herman 2 Pouring Station vent (Vent V-19),
(B) Herman 2 Castings Cooling process vents (Vents V-8 and V-9),
(C) Herman 2 Shakeout process – Wet Collector #3 exhaust stack (Stack B),
(D) Herman 2 Sand Handling process – Baghouse #1 exhaust stack (Stack F), and
(E) Herman 2 Sand Handling process – Baghouse #13 exhaust stack (Stack Y)
shall be performed once per shift during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

(2) Visible emission notations of the:

(A) Klein Transport PF504-5 – Baghouse #13 exhaust stack (Stack Y)

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.3.10 Wet Collector Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Wet Collector #3 –Herman 2 Shakeout

The Permittee shall record the pressure drop and flow rate of or Herman 2 Shakeout process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #3 is below a minimum of 8 inches of water or a minimum pressure drop established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #3 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(b) A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(c) The instruments used for determining the pressures and flow rates shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.
D.3.11 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Baghouse #1 – Herman 2 Sand Handling

The Permittee shall record the pressure drop across Baghouse #1, at least once per day when the associated Herman 2 Sand Handling process is in operation. When for any one reading, the pressure drop across Baghouse #1 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #1 is a pressure drop range between 4.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(b) Baghouse #13 – Herman 2 Sand Handling

The Permittee shall record the pressure drop across Baghouse #13, at least once per day when the associated Herman 2 Sand Handling process is in operation. When for any one reading, the pressure drop across Baghouse #13 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #13 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(c) A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

(d) The instruments used for determining the pressure shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

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

D.3.12 Record Keeping Requirements

(a) To document the compliance status with Condition D.3.1 – PSD Minor Limits, the Permittee shall maintain records of the combined amount of core and mold sand handled for the:

(1) Herman 2 Sand Handling, and
(2) Herman 3 Sand Handling.

(b) To document the compliance status with Condition D.3.2 – PSD Minor Limits, the Permittee shall maintain records of the amount of waste sand handled for the:

(1) Klein Transport PF504-5

(c) To document the compliance status with Condition D.3.9(a)(1) – Visible Emissions Notations:

(1) Herman 2 Pouring Station exhaust (Vent V-19),
(2) Herman 2 Castings Cooling process exhaust (Vents V-8 and V-9),
(3) Herman 2 Shakeout process – Wet Collector #3 exhaust (Stack B),
(4) Herman 2 Sand Handling process – Baghouse #1 exhaust (Stack F), and
(5) Herman 2 Sand Handling process – Baghouse #13 exhaust (Stack Y)

once per shift and make such records available, upon request, to IDEM, OAQ. The Permittee shall include in its record when a visible emission notations was not taken and
the reason for the lack of a visible emission notations, (e.g. the process did not operate that day).

(d) To document the compliance status with Condition D.3.9(a)(2) – Visible Emissions Notations, the Permittee shall maintain records of the visible emission notations of the:

(1) Klein Transport PF504-5 – Baghouse #13 exhaust stack (Stack Y)

once per day and make such records available, upon request, to IDEM, OAQ. The Permittee shall include in its daily record when a visible emission notations was not taken and the reason for the lack of a visible emission notations, (e.g. the process did not operate that day).

(e) To document the compliance status with Condition D.3.10 – Wet Collector Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop and flow rate reading across Wet Collector #3. The Permittee shall include in its daily record when a pressure drop and flow rate reading are not taken and the reason for the lack of a pressure drop and flow rate readings, (e.g. the process did not operate that day).

(f) To document the compliance status with Condition D.3.11 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across

(1) Baghouse #1 and

(2) Baghouse #13.

The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

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

D.3.13 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.3.1(a) – PSD Minor Limits, and D.3.2(c) – PSD Minor Limits, shall be submitted using the reporting forms located at the end of this permit, or the equivalent, not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee’s obligations with regard to the reporting required by this condition.
SECTION D.4 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]

(5) Herman 3 Mold Line

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(a) One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-10.

(b) One (1) Herman 3 Castings Cooling process, constructed in 1991, and modified in 2004, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled and exhausting to the atmosphere through Vent V-12.

(c) One (1) Herman 3 Shakeout process, constructed in 1991, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(d) One (1) Herman 3 Sand Handling process, constructed in 1991, modified in 2009, and approved for modification in 2013, with a nominal throughput of 165 tons of mold and core sand per hour.

The Herman 3 Sand Handling process includes:

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed in 1991, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D, Wet Collector #2, exhausting through Stack C, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(2) one (1) Return Sand Conveyor, constructed in 2009, identified as RSC1, with particulate emissions captured and controlled by Wet Collector #1, exhausting through Stack D.

and

(3) one (1) Return Sand Surge Bin, approved for construction in 2013, identified as RSSB-1, with particulate emissions captured by Wet Collector #2, which is a voluntary control, exhausting through Stack C.

(e) One (1) dust mixing acoustic reactor (DMAR) tank sand transport system, approved for construction in 2013, recycling dust collected in baghouses #1 and #11 to increase the concentration of solids being processed within the dust mixing acoustic reactor (DMAR) loop in order to increase the VOC reduction of the Sonoperoxone® system, with a maximum capacity of 1.45 tons of waste dust per hour, uncontrolled, and exhausting indoors.

(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.4.1 BACT Requirements [326 IAC 2-2-3] [326 IAC 8-1-6]

(a) Pursuant to SSM 085-18009-00003, issued on December 9, 2003, and the requirements of 326 IAC 2-2-3 (PSD) and 326 IAC 8-1-6 (General Reduction Requirements for New Facilities), the Best Available Control Technology (BACT) shall consist of the following:

(1) Metal Throughput Limit:

The amount of metal throughput to the Herman 3 Mold Line shall not exceed 90,578 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of metal throughput is the same as the metal throughput limit specified in Condition D.4.2 – PSD Minor Limits.

(2) Sand Throughput Limits:

The amount of sand throughput to the Herman 3 Mold Line shall not exceed 543,470 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of sand throughput is the same as the sand throughput limit specified in Condition D.4.2 – PSD Minor Limits.

(3) VOC Limits and Standards

(A) The VOC emissions from the Herman 3 Pouring Station shall not exceed 0.163 pounds per ton of metal.

(B) The VOC emissions from the Herman 3 Castings 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.4.6.

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.

(C) The combined VOC emissions from the Herman 3 Shakeout and Herman 3 Sand Handling operations shall not exceed 0.115 pounds per ton of metal and sand total.

This VOC limitation is for the Herman 3 Shakeout and Herman 3 Sand Handling combined.

(D) The VOC emissions from the Herman 3 Mold Line shall be reduced through the continuous use of the Sonoperoxone® system or an equivalent system, sand system optimization, low VOC core resin binder materials, and automatic mold vent-off gas ignition.
(b) Pursuant to PSD/SSM 085-25816-00003 and 326 IAC 2-2-3 (PSD), Best Available Control Technology (BACT for Herman 3 Pouring, Cooling and Shakeout), the Permittee shall comply with the following:

<table>
<thead>
<tr>
<th>Emission Units</th>
<th>CO Limits (Pounds per ton metal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herman 3 Mold Pouring</td>
<td>1.80</td>
</tr>
<tr>
<td>Herman 3 Cast Cooling</td>
<td>2.88</td>
</tr>
<tr>
<td>Herman 3 Shakeout</td>
<td>1.32</td>
</tr>
</tbody>
</table>

D.4.2 PSD Minor Limits [326 IAC 2-2]

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

(a) Metal Throughput Limit:

The amount of metal throughput to the Herman 3 Mold Line shall not exceed 90,578 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of metal throughput is the same as the metal throughput limit specified in Condition D.4.1 – BACT Requirements.

(b) Sand Throughput Limits:

(1) The amount of sand throughput to the Herman 3 Mold Line shall not exceed 543,470 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This limitation on the amount of sand throughput is the same as the sand throughput limit specified in Condition D.4.1 – BACT Requirements.

(2) The combined amount of core and mold sand handled for the:

(A) Herman 2 Sand Handling, and

(B) Herman 3 Sand Handling

shall be limited to 1,127,516 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

This core and mold sand limitation is for the Herman 2 and Herman 3 Sand Handling combined.

(c) Herman 3 Mold Line Lead Emissions

The combined lead emissions from the Herman 3 Mold Line shall not exceed 0.013 pounds per ton of metal throughput.

(d) Herman 3 Pouring (V-10)

(1) The PM emissions from the Herman 3 Pouring Station shall not exceed 0.1176 pounds per ton of metal throughput.

(2) The PM10 emissions from the Herman 3 Pouring Station shall not exceed 0.0524 pounds per ton of metal throughput.
(e) Herman 3 Castings Cooling (V-12)

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

(2) The PM\textsubscript{10} emissions from the Herman 3 Castings Cooling process shall not exceed 0.1959 pounds per ton of metal throughput.

(f) Herman 3 Shakeout (Stack D, Stack E, and Stack W)

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

This PM limitation for the Herman 3 Shakeout is for Stack D, Stack E, and Stack W combined.

(2) The PM\textsubscript{10} emissions from the Herman 3 Shakeout process shall not exceed 0.058 pounds per ton of metal and sand throughput.

This PM\textsubscript{10} limitation for the Herman 3 Shakeout is for Stack D, Stack E, and Stack W combined.

(g) Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W)

(1) The PM emissions from the Herman 3 Sand Handling process shall not exceed 0.034 pounds per ton of metal and sand throughput.

This PM limitation for the Herman 3 Sand Handling is for Stack C, Stack D, Stack E, and Stack W combined.

(2) The PM\textsubscript{10} emissions from the Herman 3 Sand Handling process shall not exceed 0.058 pounds per ton of metal and sand throughput.

This PM\textsubscript{10} limitation for the Herman 3 Sand Handling is for Stack C, Stack D, Stack E, and Stack W combined.

(h) Herman 3 Sand Handling (Stack D)

(1) The PM emissions from the Return Sand Conveyor shall not exceed 0.000911 pounds per ton of sand.

This PM limitation for the Return Sand Conveyor is for Stack D.

(2) The PM\textsubscript{10} emissions from the Return Sand Conveyor shall not exceed 0.000431 pounds per ton of sand.

This PM\textsubscript{10} limitation for the Return Sand Conveyor is for Stack D.

(i) Herman 3 Sand Handling - Return Sand Surge Bin (Stack C)

(1) The uncontrolled PM emissions from the Return Sand Surge Bin shall not exceed 0.000911 pounds per ton of sand.

(2) The uncontrolled PM\textsubscript{10} emissions from the Return Sand Surge Bin shall not exceed 0.000431 pounds per ton of sand.
(3) The uncontrolled PM$_{2.5}$ emissions from the Return Sand Surge Bin shall not exceed 0.000065 pounds per ton of sand.

(j) Compliance with the limits listed under Conditions D.4.2 (a) through (g) above, restrict the PM, PM$_{10}$, and lead emissions from the modification to add the Herman 3 process (2003) to less than twenty-five (25) tons per year of PM, less than fifteen (15) tons per year of PM$_{10}$, and less than six tenths (0.6) tons per year of lead (Pb). Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable for PM, PM$_{10}$, and lead emissions from the 2003 modification to add the Herman 3 process.

(k) Compliance with the limits listed under (h) above, combined with the limits in Conditions D.4.2(b)(1), D.3.2 and D.6.1.3 restrict the PM and PM$_{10}$ emissions from the modification to add the Return Sand Conveyor, robotic grinders, and Klein Transports for waste sand handling (2009) to less than twenty-five (25) tons per year of PM and less than fifteen (15) tons per year of PM$_{10}$. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable for PM and PM$_{10}$ emissions from the 2009 modification to add the Return Sand Conveyor, robotic grinders, and Klein Transports for waste sand handling, including the unrestricted PTE of the fugitive emissions from these emission units.

(l) Compliance with the limits listed under (i) above, combined with the uncaptured emissions and the limits in Conditions D.6.1(e) through (i) and D.8.2 will limit the modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM$_{10}$ per year, less than ten (10) tons of PM$_{2.5}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2013 modification to the shot blast machine (SB-9), core sand heater and mixer- core making line #1, and return sand bin - Herman 3 mold line.

### D.4.3 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herman 3 Pouring (V-10)</td>
<td>193</td>
<td>58.1</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 3 Castings Cooling (V-12)</td>
<td>193</td>
<td>58.1</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 3 Shakeout (Wet Collector #4, Stack E and Baghouse #11, Stack W)</td>
<td>193</td>
<td>58.1</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 3 Sand Handling (Wet Collector #1, Stack D, Wet Collector #2, Stack C, Wet Collector #4, Stack E, and Baghouse #11, Stack W)</td>
<td>165</td>
<td>56.4</td>
<td>(b)</td>
</tr>
<tr>
<td>Herman 3 DMAR Tank Sand Transport System (Indoors)</td>
<td>1.45</td>
<td>5.26</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[
E = 4.10 \times P^{0.67}
\]

where \( E = \) rate of emission in pounds per hour and \( P = \) process weight rate in tons per hour
(b) 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:

\[ E = 55.0 \times P^{0.11} - 40 \]

where \( E \) = rate of emission in pounds per hour; and
\( P \) = process weight rate in tons per hour

D.4.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee’s obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.4.5 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Wet Collector #1 – Herman 3 Shakeout and Herman 3 Sand Handling

The Wet Collector #1 for particulate emissions control shall be in operation and control emissions from the Herman 3 Sand Handling and Herman 3 Shakeout processes at all times when either of these processes are in operation.

(b) Wet Collector #2 – Herman 3 Sand Handling

The Wet Collector #2 for particulate emissions control shall be in operation and control emissions from the Herman 3 Sand Handling at all times when the Herman 3 Sand Handling process is in operation.

(c) Wet Collector #4 – Herman 3 Sand Handling and Herman 3 Shakeout

The Wet Collector #4 for particulate control shall be in operation at all times and control emissions from the Herman 3 Sand Handling and Herman 3 Shakeout processes at all times when either of these processes are in operation.

(d) Baghouse #11 – Herman 3 Shakeout and Herman 3 Sand Handling

(1) The Baghouse #11 for particulate control shall be in operation and control emissions from the Herman 3 Shakeout and Herman 3 Sand Handling processes at all times when either of these processes are in operation.

(2) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

(e) Sonoperoxone® System or Equivalent System – Herman 3 Mold Line

The Sonoperoxone® system or an equivalent system in association with the DMAR Tank Sand Transport System for volatile organic compounds emissions control shall be in operation and control emissions from the Herman 3 Mold Line at all times when the Herman 3 Mold Line is in operation.
D.4.6 Testing Requirements [326 IAC 2-7-6(1),(6)]

(a) The Permittee shall perform VOC testing on the:

1. Herman 3 Pouring (V-10),
2. Herman 3 Castings Cooling (V-12), and
3. Herman 3 Shakeout (Stack D, Stack E, and Stack W)
4. Herman 3 Sand Handling (Stack C, Stack D, Stack E and Stack W)

in order to demonstrate the compliance status with Condition D.4.1(a)(3).

(b) The Permittee shall perform CO testing on the:

1. Herman 3 Pouring (V-10),
2. Herman 3 Castings Cooling (V-12), and
3. Herman 3 Shakeout (Stack D, Stack E, and Stack W)

in order to demonstrate the compliance status with Condition D.4.1(b).

(c) The Permittee shall perform lead (Pb) testing on the:

1. Herman 3 Pouring (V-10),
2. Herman 3 Castings Cooling (V-12),
3. Herman 3 Shakeout (Stack D, Stack E, and Stack W),
4. Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W), and
5. Return Sand Conveyor (Stack D)

in order to demonstrate the compliance status with Condition D.4.2(c).

(d) The Permittee shall perform PM testing on the:

1. Herman 3 Pouring (V-10),
2. Herman 3 Castings Cooling (V-12),
3. Herman 3 Shakeout (Stack D, Stack E, and Stack W), and
4. Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W)

in order to demonstrate the compliance status with paragraphs (d)(1), (e)(1), (f)(1), (g)(1) of Conditions D.4.2 and Condition D.4.3.

(e) The Permittee shall perform PM$_{10}$ testing on the:

1. Herman 3 Pouring (V-10),
2. Herman 3 Castings Cooling (V-12),
3. Herman 3 Shakeout (Stack D, Stack E, and Stack W),
4. Herman 3 Sand Handling (Stack C, Stack D, Stack E, and Stack W)

in order to demonstrate the compliance status with paragraphs (d)(2), (e)(2), (f)(2), (g)(2) of Conditions D.4.2. PM$_{10}$ includes filterable and condensable PM.

(f) Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee’s obligations with regard to the testing required by this condition.

NOTE: Herman 2 and Herman 3 testing shall be performed alternatively, that is if Herman 3 testing for pollutants PM, PM$_{10}$, VOC, CO, and Pb are performed in the first five (5) years.
cycle, Herman 2 testing for pollutants PM, PM<sub>10</sub>, VOC, and Pb shall be performed in the next five (5) year testing cycle.

D.4.7 Continuous Opacity Monitoring [326 IAC 3-5] [326 IAC 2-2-3]

(a) Continuous Opacity Monitoring (COM)

(1) Pursuant to 326 IAC 2-2-3, upon startup of the Herman 3 Castings Cooling, a continuous monitoring system shall be installed, calibrated, maintained, and operated for measuring opacity from the Herman 3 Castings Cooling vent (V-12).

(2) The continuous monitoring systems shall meet the performance specifications of 326 IAC 3-5-2.

(b) Opacity – 10%

Pursuant to CP 085-2141-00003, issued on December 12, 1991, and SSM 085-18009-00003, issued on December 9, 2003:

The Permittee shall take appropriate response steps whenever the opacity exceeds 10% for three (3) consecutive six (6) minute averaging periods. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

D.4.8 Maintenance of Continuous 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 COMS 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 COMS occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem.

(d) Whenever a COMS is malfunctioning or is down for maintenance or repairs for a period of twenty-four (24) hours or more and a backup COMS is not online within twenty-four (24) hours of shutdown or malfunction of the primary COMS, the Permittee shall provide a certified opacity reader, who may be an employee of the Permittee or an independent contractor, to self-monitor Emissions from the emission unit stack.

(1) 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.

(2) Method 9 opacity readings shall be repeated for a minimum of five (5) consecutive six (6) minute averaging periods at least twice per day during daylight operations, with at least four (4) hours between each set of readings, until a COMS is online.

(3) Method 9 readings may be discontinued once a COMS is online.

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

(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 3-5.

D.4.9 Wet Collector Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

In the event that wet collector failure has been observed, the failed wet collector and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).

D.4.10 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.4.11 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Wet Collector #1 exhaust stack (Stack D),
(2) Wet Collector #2 exhaust stack (Stack C),
(3) Wet Collector #4 exhaust stack (Stack E), and
(4) Baghouse #11 exhaust stack (Stack W)

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

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

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

(d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
(e) If abnormal emissions are observed, the Permittee shall take reasonable response steps. Observation of abnormal emissions that do not violate an applicable opacity limit is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

D.4.12 Wet Collector Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Wet Collector #1 – Herman 3 Sand Handling and Herman 3 Shakeout

The Permittee shall record the pressure drop and flow rate across the Wet Collector #1, at least once per day, when either the Herman 3 sand handling process or the Herman 3 Shakeout process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #1 is below a minimum of 8 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #1 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(b) Wet Collector #2 – Herman 3 Sand Handling

The Permittee shall record the pressure drop and flow rate across the Wet Collector #2, at least once per day, when the Herman 3 Sand Handling process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #2 is below a minimum of 8 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #2 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(c) Wet Collector #4 – Herman 3 Sand Handling and Herman 3 Shakeout

The Permittee shall record the pressure drop and flow rate across Wet Collector #4, at least once per day, when either the Herman 3 Sand Handling process or Shakeout process is in operation.

(1) When for any one reading, the pressure drop across Wet Collector #4 is below a minimum of 8 inches of water or a minimum established during the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the flow rate across Wet Collector #4 is below a minimum of 200 gallons per minute or a minimum flow rate established during the latest stack test, the Permittee shall take reasonable response steps.

(d) A pressure reading or flow rate that is below the above mentioned minimums is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

(e) The instruments used for determining the pressures and flow rates shall comply with
Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

D.4.13 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the pressure drop across the Baghouse #11, at least once per day, when either of the following processes:

(1) Herman 3 Shakeout, or

(2) Herman 3 Sand Handling

are in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #11 is a pressure drop range between 4.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

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

D.4.14 Parametric Monitoring of Sonoperoxone® System or Equivalent System [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Ultra-Sonic Power – Herman 3 Mold Line
The Permittee shall monitor and record the ultra-sonic power of the Sonoperoxone® system or equivalent system used in conjunction with the Herman 3 Mold Line, at least once per day when the Herman 3 Mold 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. An ultra-sonic power reading that is below the above mentioned minimum is not a deviation from this permit.

(b) Ozone Generator Plasma Voltage – Herman 3 Mold Line
The Permittee shall monitor and record the ozone generator plasma voltage of the Sonoperoxone® system or equivalent system used in conjunction with the Herman 3 Mold Line, at least once per day when the Herman 3 Mold 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. An ozone generator plasma voltage reading that is below the above mentioned minimum is not a deviation from this permit.

(c) Hydrogen Peroxide Usage – Herman 3 Mold line
The Permittee shall monitor and record the hydrogen peroxide usage of the Sonoperoxone® system or equivalent system used in conjunction with the Herman 3 Mold Line, at least once per day when the Herman 3 Mold 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. A peroxide usage reading that is below the above mentioned minimum is not 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 – 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) Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

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

### D.4.15 Record Keeping Requirements

| (a) | To document the compliance status with Conditions D.4.1 – BACT Requirements, and D.4.2 – PSD Minor Limits, the Permittee shall maintain records of the amounts of metal and sand throughputs to the Herman 3 Mold Line. |
| (b) | To document the compliance status with Conditions D.4.1 – BACT Requirements, and D.4.2 – PSD Minor Limits, the Permittee shall maintain records of the combined amount of core and mold sand handled for the: |
| |
| (1) | Herman 2 Sand Handling, and |
| (2) | Herman 3 Sand Handling. |
| (c) | To document the compliance status with Condition D.4.7 – Continuous Opacity Monitoring and Section C – Opacity, the Permittee shall maintain records of opacity from the continuous opacity monitor on the Herman 3 Castings Cooling vent (V-12), including raw data and supporting information, for a minimum of five (5) years, and make such records available upon request to IDEM, OAQ. |
| (d) | To document the compliance status with Condition D.4.11 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the wet collector #1, wet collector #2, wet collector #4, and baghouse #11 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day). |
| (e) | To document the compliance status with Condition D.4.12 – Wet Collector Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop and flow rate reading across wet collector #1, wet collector #2, and wet collector #4. The Permittee shall include in its daily record when a pressure drop and flow rate reading are not taken and the reason for the lack of a pressure drop and flow rate readings, (e.g. the process did not operate that day). |
| (f) | To document the compliance status with Condition D.4.13 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #11. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day). |
| (g) | To document the compliance status with Condition D.4.14 – Parametric Monitoring of Sonoperoxone® System or Equivalent System, the Permittee shall maintain records of the: |
| |
| (1) | ultra-sonic power, |
| (2) | ozone generator plasma voltage, and |
| (3) | hydrogen peroxide usage of the Sonoperoxone® system |
| | and make such records available upon request to IDEM, OAQ. |
Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.

D.4.16 Reporting Requirements

(a) A quarterly summary of the information to document the compliance status with Condition D.4.1 (a)(1) and (a)(2) – BACT Requirements, and Condition D.4.2 (a) and (b) – PSD Minor Limits, shall be submitted not later than thirty (30) days following the end of each calendar quarter.

(b) A quarterly summary of excess opacity emissions, as defined in 326 IAC 3-5-7, from the continuous monitoring system, shall be submitted not later than thirty (30) days following the end of each calendar quarter.

(c) These reports submitted by the Permittee do require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]

(6) Inclined Shakeout and Sort System (servicing Herman 2 and Herman 3)

(a) One (1) Inclined Shakeout and Sort System, constructed prior to 1977, with a nominal throughput of 48.5 tons of iron per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G.

(b) One (1) Vibratory Shaker, identified as VB1, permitted in 2011, with a nominal capacity of 48.5 tons iron per hour, with particulate emissions captured and controlled by Baghouse #3, exhausting through Stack H.

(7) Waste Sand Handling, Screening and Transport System (servicing Herman 2 and Herman 3)

One (1) Waste Sand Handling, Screening and Transport System, constructed prior to 1977, with a nominal throughput of 20 tons of waste sand per hour.

The Waste Sand Handling, Screening and Transport System consists of a rotary screen process, a magnetic separator, a silo, an elevated bin hopper, and a transport (Dependable) system.

Particulate emissions from the Waste Sand Handling, Screening and Transport system are captured and controlled by Baghouse #9, exhausting through Stack R.

(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.5.1 PSD Minor Limits [326 IAC 2-2]

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

(a) Inclined Shakeout and Sort System (Stack G)

(1) The PM emissions from the Inclined Shakeout and Sort system shall be limited to 0.072 pounds per ton of metal.

(2) The PM$_{10}$ emissions from the Inclined Shakeout and Sort system shall be limited to 0.072 pounds per ton of metal.

(b) Waste Sand Handling, Screening and Transport Sand Throughput Limit (Stack R)

(1) The amount of sand throughput to the Waste Sand Handling, Screening and Transport system shall be limited to 112,752 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(2) The PM emissions from the Waste Sand Handling, Screening and Transport system shall be limited to 0.072 pounds per ton of sand.
(3) The PM₁₀ emissions from the Waste Sand Handling, Screening and Transport system shall be limited to 0.011 pounds per ton of sand.

Compliance with the limits in (a) and (b) above and the limits specified in Conditions D.1.1, D.2.1, D.3.1, D.6.1 and D.7.2 will render the requirements of 326 IAC 2-2 (PSD) not applicable to permit No. 085-14027-00003 (the former Hot Box Core Making Line #9 installation), and to the Significant Permit Modification No. 085-25675-00003 (Conversion of the Hot Box Core Making Line #9 to Phenolic Urethane Core Making Line #9).

(c) Vibratory Shaker VB1 (Stack H)

Metal Throughput

(1) The amount of metal throughput to the Vibratory Shaker VB1 shall not exceed 30,000 tons of metal per twelve (12) consecutive month period, with compliance determined at the end of each month.

PM

(2) The PM emissions after control from the Vibratory Shaker VB1 stack (Stack H) shall not exceed 0.941 pound per ton of metal.

(3) The uncontrolled PM emissions before control from the Vibratory Shaker VB1 shall not exceed 0.064 pound per ton of metal.

PM₁₀

(4) The PM₁₀ emissions after control from the Vibratory Shaker VB1 stack (Stack H) shall not exceed 0.659 pound per ton of metal.

(5) The uncontrolled PM₁₀ emissions from the Vibratory Shaker VB1 shall not exceed 0.045 pound per ton of metal.

Compliance with the limits listed in (c) above, combined with the limits specified in Condition D.6.1.2, shall ensure that the potential to emit from the 2011 modification (permitted in SSM No. 085-29402-00003, issued on January 20, 2011) to add the Vibratory Shaker, and Hose Blast system are less than twenty-five (25) tons of PM and fifteen (15) tons of PM₁₀ per twelve (12) consecutive month period, respectively, and shall render 326 IAC 2-2 (PSD) not applicable to the 2011 modification.

D.5.2 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclined Shakeout and Sort System (Baghouse #2, Stack G)</td>
<td>48.5</td>
<td>44.3</td>
<td>(b)</td>
</tr>
<tr>
<td>Vibratory Shaker VB1 (Baghouse #3, Stack H)</td>
<td>48.5</td>
<td>44.3</td>
<td>(b)</td>
</tr>
<tr>
<td>Waste Sand Handling, Screening and Transport System (Baghouse #9, Stack R)</td>
<td>20</td>
<td>30.5</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 P^{0.67} \]

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

D.5.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.5.4 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Baghouse #2 – Inclined Shakeout and Sort System

The Baghouse #2 for particulate emissions control shall be in operation and control emissions from the Inclined Shakeout and Sort system at all times when the Inclined Shakeout and Sorting system is in operation.

(b) Baghouse #9 – Waste Sand Handling, Screening and Transport System

The Baghouse #9 for particulate emissions control shall be in operation and control emissions from the Waste Sand Transport at all times when the Waste Sand Handling, Screening and Transport system is in operation.

(c) Baghouse #3 - Vibratory Shaker VB1

The Baghouse #3 for particulate emissions control shall be in operation and control emissions from the Vibratory Shaker VB1 at all times when the Vibratory Shaker VB1 is in operation.

(d) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.5.5 Testing Requirements [326 IAC 2-7-6(1), (6)]

(a) In order to demonstrate the compliance status with Conditions D.5.1(c) and D.5.2, the Permittee shall perform PM testing on the Vibratory Shaker VB1.

(b) In order to demonstrate the compliance status with Condition D.5.1(c), the Permittee shall perform emissions testing to determine the PM\(_{10}\) emissions for the Vibratory Shaker VB1.

PM\(_{10}\) includes filterable and condensable PM.

(c) Testing shall be conducted using methods as approved by the Commissioner at least once every five (5) years for PM and PM\(_{10}\), from the date of the last valid compliance demonstration. Testing shall be conducted using the provisions of 326 IAC 3-6 (Source Sampling Procedures).

Section C - Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.
D.5.6 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.5.7 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Baghouse #2 exhaust stack (Stack G),
(2) Baghouse #9 exhaust stack (Stack R), and
(3) Baghouse #3 exhaust stack (Stack H),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.5.8 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Baghouse #2 – Inclined Shakeout and Sort System

The Permittee shall record the pressure drop across Baghouse #2, at least once per day when the associated Inclined Shakeout and Sorting system is in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #2 is
outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #2 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(b) Baghouse #9 – Waste Sand Handling, Screening and Transport

The Permittee shall record the pressure drop across Baghouse #9, at least once per day when the associated Waste Sand Handling, Screening and Transport system is in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #9 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #9 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(c) A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

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

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

D.5.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.1 – PSD Minor Limits, the Permittee shall maintain records of the amount of sand throughput to the Waste Sand Handling, Screening and Transport system and the amount of metal throughput to the Vibratory Shaker VB1.

(b) To document the compliance status with Condition D.5.7 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the baghouse #2, baghouse #3, and baghouse #9 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(c) To document the compliance status with Condition D.5.8 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #2 and baghouse #9. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

(d) Section C - General Record Keeping Requirements contains the Permittee’s obligations with regard to the record keeping required by this condition.

D.5.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.5.1(b)(1) and D.5.1(c)(1), shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee’s obligations with regard to the reporting required by this condition.
### SECTION D.6 FACILITY OPERATION CONDITIONS

#### Facility Description [326 IAC 2-7-5(14)]

<table>
<thead>
<tr>
<th>(8) Shot Blast Machines</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Five (5) Shot Blast Machines:</td>
</tr>
<tr>
<td>(1) Three (3) Shot Blast Machines, identified as SB-1, SB-2, and SB-4, each constructed prior to 1977, each with a nominal capacity of 5.0 tons of iron castings per hour.</td>
</tr>
<tr>
<td>(2) One (1) Shot Blast Machine, identified as SB-3, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour.</td>
</tr>
<tr>
<td>(3) One (1) Shot Blast Machine, permitted in 2006 and modified in 2011 to add a manual blow-off chamber, identified as SB-10, with a nominal capacity of 5 tons of iron castings per hour.</td>
</tr>
</tbody>
</table>

Particulate emissions from these Shot Blast Machines are captured and controlled by Baghouse #3, exhausting through Stack H.

Particulate emissions from the manual blow-off chamber for SB-10 are captured and controlled by a fabric filter control device exhausted internally.

| (b) Three (3) Shot Blast Machines: |
| (1) One (1) Shot Blast Machine, identified as SB-5, constructed prior to 1977, with a nominal throughput of 5.0 tons of iron castings per hour. |
| (2) One (1) Shot Blast Machine, identified as SB-6, constructed in 1981, with a nominal throughput of 5.0 tons of iron castings per hour. |
| (3) One (1) Shot Blast Machine, identified as SB-8, constructed in 1988, with a nominal throughput of 8.0 tons of iron castings per hour. |
| (4) One (1) hose blast operation for Shot Blast #8, permitted in 2011, identified as HB1, with a nominal capacity of 8.0 tons of iron castings per hour. |

Particulate emissions from these Shot Blast Machines and the hose blast operation are captured and controlled by Baghouse #16, exhausting through Stack AG.

| (c) One (1) Shot Blast Machine, identified as SB-7, constructed in 1978 with a nominal throughput of 6.0 tons of iron castings per hour. |

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #6, exhausting through Stack K.

| (d) One (1) Shot Blast Machine, identified as SB-9, constructed in 1995 and approved for modification in 2013 by adding shot wheels, with a nominal throughput of 12.5 tons of iron castings per hour. |

Particulate emissions from this Shot Blast Machine are captured and controlled by Baghouse #12, exhausting through Stack X. |
(9) Grinders and Finishing Stations

(a) Fourteen (14) Grinders:

(1) Twelve (12) Grinders, identified as GR-1 through GR-4, GR-9, GR-10, GR-29, and GR-30, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

(2) Two (2) robotic grinders, constructed in 2009, identified as:

   (A) ABB, with a total nominal capacity of 1.0 tons of iron castings per hour, and

   (B) FANUC, with a total nominal capacity of 1.5 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #15, exhausting through Stack AE.

(b) Six (6) Grinders, identified as GR-11 through GR-14, GR-16, and GR-17, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour, with particulate emissions from these Grinders are captured and controlled by Baghouse #16, exhausting through Stack AG.

(c) Eight (8) Grinders, identified as GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #6, exhausting through Stack K.

(d) Four (4) Grinders, identified as GR-31 through GR-33; and GR-37, constructed prior to 1977, each with a nominal throughput of 4.0 tons of iron castings per hour.

Particulate emissions from these Grinders are captured and controlled by Baghouse #12, exhausting through Stack X.

(e) Two (2) MAUS automatic grinders, identified as MAUS Grinders #1 and #2, approved in 2017 for construction, each with a nominal throughput of 3.0 tons of iron casting per hour, with particulate emissions captured and controlled by a shared box type fabric filter, exhausting internally.

(f) Four (4) manual casting finishing stations, identified as Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, approved in 2018 for construction, each with a maximum capacity of 1.0 ton per hour, using a common baghouse ZZ for control, and exhausting internally.

(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.6.1 PSD Minor Limits [326 IAC 2-2]

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

SB-1 through SB-9
(a) The amount of total finished castings from Shot Blast Machines (SB-1 through SB-9) combined shall not exceed 112,752 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

SB-1 through SB-8
(b) The PM emissions from each Shot Blast Machine (SB-1 through SB-8) shall be limited to 0.5066 pounds per ton of metal finished.
(c) The PM\textsubscript{10} emissions from each Shot Blast Machine (SB-1 through SB-8) shall be limited to 0.5066 pounds per ton of metal finished.
(d) The lead emissions from each Shot Blast Machine (SB-1 through SB-8) shall be limited to 0.0045 pounds per ton of metal finished.

SB-9
(e) The amount of total finished castings from Shot Blast Machine (SB-9) shall not exceed 60,500 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.
(f) The PM emissions from the Shot Blast Machine (SB-9), controlled by Baghouse #12, shall not exceed 0.167 pounds per ton.
(g) The PM\textsubscript{10} emissions from the Shot Blast Machine (SB-9), controlled by Baghouse #12, shall not exceed 0.151 pounds per ton.
(h) The PM\textsubscript{2.5} emissions from the Shot Blast Machine (SB-9), controlled by Baghouse #12, shall not exceed 0.12 pounds per ton.
(i) The lead (Pb) emissions from the Shot Blast Machine (SB-9), controlled by Baghouse #12, shall not exceed 0.0045 pounds per ton.

Compliance with the limits listed above under (a), (b), (c), (d), (f), (g), and (i) and the limits specified in Conditions D.1.1, D.2.1, D.3.1, D.5.1(a) & (b) and D.7.2 will restrict the potential to emit from the conversion of the hot box core making line #9 to Phenolic Urethane core making line #9 to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM\textsubscript{10} per year, and less than 0.6 tons of lead (Pb) per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2002 modification, which involved the conversion of the hot box core making line #9 to Phenolic Urethane core making line #9.

Compliance with the limits listed above under (e) through (i), combined with the uncaptured emissions and the limits in Conditions D.4.2(i) and D.8.2 will limit the modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM\textsubscript{10} per year, less than ten (10) tons of PM\textsubscript{2.5} per year, and less than 0.6 tons of lead (Pb) per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2013 modification to the shot blast machine (SB-9), core sand heater and mixer- core making line #1, and return sand surge bin - Herman 3 mold line.
### D.6.1.1 PSD Minor Limits [326 IAC 2-2]

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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>The PM emission rate from Shot Blast Machine SB-10 controlled by Baghouse #3 shall not exceed 5.7 pounds per hour.</td>
</tr>
<tr>
<td>(b)</td>
<td>The PM$_{10}$ emission rate from Shot Blast Machine SB-10 controlled by Baghouse #3 shall not exceed 3.40 pounds per hour.</td>
</tr>
</tbody>
</table>

Compliance with the limits above will restrict the potential to emit from SB-10 to less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM$_{10}$ per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to SB-10.

### D.6.1.2 PSD Minor Limits [326 IAC 2-2]

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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>The amount of total finished castings from the Hose Blast system for Shot Blast Machine SB-8 shall not exceed 16,500 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.</td>
</tr>
<tr>
<td>(b)</td>
<td>The PM emission rate from the Hose Blast system for Shot Blast Machine SB-8 controlled by Baghouse #16 shall not exceed 0.67 pounds per ton.</td>
</tr>
<tr>
<td>(c)</td>
<td>The PM$_{10}$ emission rate from the Hose Blast system for Shot Blast Machine SB-8 controlled by Baghouse #16 shall not exceed 0.34 pounds per ton.</td>
</tr>
<tr>
<td>(d)</td>
<td>The Pb emission rate from the Hose Blast system for Shot Blast Machine SB-8 controlled by Baghouse #16 shall not exceed 0.066 pounds per ton.</td>
</tr>
</tbody>
</table>

Compliance with the limits above and the limits specified in Condition D.5.1(c), (d) & (e) will restrict the potential to emit from the 2011 modification to add the Vibratory Shaker, and Hose Blast system to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM$_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modification to add the Vibratory Shaker, and Hose Blast system, including the unrestricted PTE of the ‘fugitive’ emissions from these emission units.

### D.6.1.3 PSD Minor Limits [326 IAC 2-2]

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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>The amount of total finished castings from the ABB and FANUC grinders shall not exceed 15,500 tons of castings finished per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.</td>
</tr>
<tr>
<td>(b)</td>
<td>The PM emission rate from the ABB and FANUC grinders controlled by Baghouse #16 shall not exceed 0.34 pounds per ton.</td>
</tr>
<tr>
<td>(c)</td>
<td>The PM$_{10}$ emission rate from the ABB and FANUC grinders controlled by Baghouse #16 shall not exceed 0.34 pounds per ton.</td>
</tr>
<tr>
<td>(d)</td>
<td>The Pb emission rate from the ABB and FANUC grinders controlled by Baghouse #16 shall not exceed 0.07 pounds per ton.</td>
</tr>
</tbody>
</table>
Compliance with the limits above and the limits specified in Conditions D.3.2 and D.4.2(h) will restrict the potential to emit from the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM$_{10}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2009 modification to add the Klein Transports (Waste Sand Handling), Return Sand Conveyor, and Robotic Grinders, including the unrestricted PTE of the ‘fugitive’ emissions from these emission units.

D.6.1.4 PSD Minor Limits [326 IAC 2-2]

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

(a) The total amount of casting into the SB 10 Blow-Off Chamber shall not exceed 20,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The PM emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed 0.605 pounds per ton.

(c) The PM$_{10}$ emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed 1.088 pounds per ton.

(d) The lead (Pb) emission rate from the SB 10 Blow-Off Chamber controlled by an internally exhausted fabric filter control device shall not exceed 0.058 pounds per ton.

Compliance with the above limits and the fugitive emissions will limit the modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM$_{10}$ per year, and less than 0.6 tons of lead (Pb) per year and render the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modification.

D.6.1.5 PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 (PSD) not applicable to the 2017 modification, the Permittee shall comply with the following:

(a) The total amount of finished castings into the two (2) MAUS automatic grinders shall not exceed 21,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The total PM emissions from the two (2) MAUS automatic grinders controlled by the fabric filter shall not exceed 1.68 pounds per ton.

(c) The total PM$_{10}$ emissions from the two (2) MAUS automatic grinders controlled by the fabric filter shall not exceed 0.42 pounds per ton.

(d) The total PM$_{2.5}$ emissions from the two (2) MAUS automatic grinders controlled by the fabric filter shall not exceed 0.93 pounds per ton.

(e) The total Pb emissions from the two (2) MAUS automatic grinders controlled by the fabric filter shall not exceed 0.04 pounds per ton.

Compliance with the limits listed above, combined with the uncaptured and uncontrolled emissions from MAUS Grinder #1 and #2 as shown below:

\[
\begin{align*}
PM &= 1.79 \text{ tons per twelve (12) consecutive month period} \\
PM_{10} &= 0.18 \text{ tons per twelve (12) consecutive month period} \\
PM_{2.5} &= 0.18 \text{ tons per twelve (12) consecutive month period} \\
Pb &= 0.01 \text{ tons per twelve (12) consecutive month period}
\end{align*}
\]
will limit the modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM10 per year, less than ten (10) tons of PM2.5 per year, and less than 0.6 tons of lead (Pb) per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2017 modification.

### D.6.1.6 PSD Minor Limits [326 IAC 2-2]

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

(a) **Throughput**
   The total throughput of finished metal processed at Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 17,500 tons of metal per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) **PM**
   (1) The PM emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 1.68 pounds per ton of finished metal.
   (2) The uncaptured and uncontrolled PM emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 1.49 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) **PM10**
   (1) The PM10 emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.42 pound per ton of finished metal.
   (2) The uncaptured and uncontrolled PM10 emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.15 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) **PM2.5**
   (1) The PM2.5 emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.93 pound per ton of finished metal.
   (2) The uncaptured and uncontrolled PM2.5 emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.15 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) **Lead**
   (1) The lead (Pb) emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.04 pound per ton of finished metal.
   (2) The uncaptured and uncontrolled Pb emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.01 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with these limits, combined with the limited emissions from the following:

(1) Phenolic Urethane Core Sand Hopper #12,
(2) Phenolic Urethane Weigh Hopper #12, and
(3) Sand Heater #12 (non-natural gas) particulate emissions;

...
D.6.2 Particulate Emission Limitation for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shot Blast Machines SB-1, SB-2, SB-3, SB-4, and SB-10 (Baghouse #3)</td>
<td>5.0, each</td>
<td>12.1, each</td>
</tr>
<tr>
<td>Shot Blast Machines SB-5 and SB-6 (Baghouse #16)</td>
<td>5.0, each</td>
<td>12.1, each</td>
</tr>
<tr>
<td>Shot Blast Machine SB-7 (Baghouse #6)</td>
<td>6.0</td>
<td>13.6</td>
</tr>
<tr>
<td>Shot Blast Machine SB-8 and Hose Blast for SB-8 (Baghouse #16)</td>
<td>8.0, each</td>
<td>8.56, each</td>
</tr>
<tr>
<td>Shot Blast Machine SB-9 (Baghouse #12)</td>
<td>12.5</td>
<td>22.3</td>
</tr>
<tr>
<td>Shot Blast Machine SB-10 Blow-off Chamber (Fabric Filter)</td>
<td>5.0</td>
<td>12.1</td>
</tr>
<tr>
<td>Grinders GR-1 through GR-4, GR-9, GR-10, GR-29, and GR-30 (Baghouse #15)</td>
<td>4.0, each</td>
<td>10.4, each</td>
</tr>
<tr>
<td>Grinder ABB (Baghouse #15)</td>
<td>1.0</td>
<td>4.1</td>
</tr>
<tr>
<td>Grinder FANUC (Baghouse #15)</td>
<td>1.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Grinders GR-11 through GR-14 and GR-17 (Baghouse #16)</td>
<td>4.0, each</td>
<td>10.4, each</td>
</tr>
<tr>
<td>Grinders GR-19, GR-20, GR-23, GR-25, GR-26, GR-34, GR-35, and GR-36 (Baghouse #6)</td>
<td>4.0, each</td>
<td>10.4, each</td>
</tr>
<tr>
<td>Grinders GR-31, GR-32, GR-33, and GR-37 (Baghouse #12)</td>
<td>4.0, each</td>
<td>10.4, each</td>
</tr>
<tr>
<td>MAUS Automatic Grinders #1 and #2 (Fabric Filter)</td>
<td>3.0, each</td>
<td>8.56, each</td>
</tr>
<tr>
<td>Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4 (Baghouse ZZ)</td>
<td>1.0, each</td>
<td>4.10, each</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 \times P^{0.67} \]

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

D.6.3 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.
Compliance Determination Requirements

D.6.4 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate the compliance status with Conditions D.6.1(b), D.6.1.1(a), D.6.1.2(b), D.6.1.3(b), and D.6.2, the Permittee shall perform PM testing on:

1. Baghouse #3 exhaust stack (Stack H),
2. Baghouse #6 exhaust stack (Stack K),
3. Baghouse #15 exhaust stack (Stack AE), and
4. Baghouse #16 exhaust stack (Stack AG),

when any of the controlled emission units are in operation.

Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

(b) In order to demonstrate compliance with Conditions D.6.1(c), D.6.1.1(b), D.6.1.2(c), and D.6.1.3(c), the Permittee shall perform PM10 emissions testing on:

1. Baghouse #3 exhaust stack (Stack H),
2. Baghouse #6 exhaust stack (Stack K),
3. Baghouse #15 exhaust stack (Stack AE), and
4. Baghouse #16 exhaust stack (Stack AG),

when any of the controlled emission units are in operation.

Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

PM10 includes filterable and condensable PM.

(c) In order to demonstrate the compliance status with Conditions D.6.1(d), D.6.1.2(d) and D.6.1.3(d), the Permittee shall perform Pb testing on:

1. Baghouse #3 exhaust stack (Stack H),
2. Baghouse #6 exhaust stack (Stack K),
3. Baghouse #15 exhaust stack (Stack AE), and
4. Baghouse #16 exhaust stack (Stack AG),

when any of the controlled emission units are in operation.

Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

(d) In order to demonstrate the compliance status with Conditions D.6.1(f), D.6.1(g), D.6.1(h), D.6.1(i), and D.6.2, the Permittee shall perform PM, PM10, PM2.5, and Pb testing of Baghouse #12 (Stack X), when shot blast machine (SB-9) and grinders (GR-31 through GR-33 and GR-37) are all in operation, not later than one hundred eighty (180) days after initial startup of the modified shot blast machine (SB-9).

Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

PM10 and PM2.5 includes filterable and condensable PM.
(e) Not later than 180 days after the startup of the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, the Permittee shall perform PM, PM10, PM2.5 and Pb testing for Baghouse ZZ, utilizing methods approved by the Commissioner.

This test shall be repeated at least once every 5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

PM10 and PM2.5 includes filterable and condensable PM.

(f) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee’s obligations with regard to the testing required by this condition.

D.6.5 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Baghouse #3

The Baghouse #3 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machines, SB-1 through SB-4, and SB-10, at all times that any one of these Shot Blast Machines is in operation.

(b) Baghouse #6

(1) The Baghouse #6 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machine SB-7 at all times that Shot Blast Machine SB-7 is in operation.

(2) The Baghouse #6 for particulate emissions control shall be in operation and control emissions from the Grinders GR-19, GR-20, GR-23, GR-25, GR-26, and GR-34 through GR-36 at all times that any of these Grinders is in operation.

(c) Baghouse #12

(1) The Baghouse #12 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machine SB-9 all times that Shot Blast Machine SB-9 is in operation.

(2) The Baghouse #12 for particulate emissions control shall be in operation and control emissions from the Grinders GR-31 through GR-33, and GR-37 all times that any of these Grinders is in operation.

(d) Baghouse #15

The Baghouse #15 for particulate emissions control shall be in operation and control emissions from the Grinders GR-1 through GR-4, GR-9, GR-10, GR-29, GR-30, ABB, and FANUC, at all times that any one of these Grinders is in operation.

(e) Baghouse #16

(1) The Baghouse #16 for particulate emissions control shall be in operation and control emissions from the Shot Blast Machines SB-5, SB-6, SB-8, and Hose Blast HB1, at all times that any one of these Shot Blast Machines or the Hose Blast Machine is in operation.

(2) The Baghouse #16 for particulate emissions control shall be in operation and control emissions from the Grinders GR-11 through GR-14, GR-16, GR-17 at all
times that any one of these Grinders is in operation.

(f) Fabric Filter

The fabric filter for particulate emissions control shall be in operation and control emissions from the MAUS Grinders #1 and #2 at all times that any one of these Grinders is in operation.

(g) Baghouse ZZ

The Baghouse ZZ for particulate emissions control shall be in operation and control emissions from the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, at all times that any one of these finishing stations is in operation.

(h) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.6.6 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.6.7 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

(1) Baghouse #3 exhaust stack (Stack H),
(2) Baghouse #6 exhaust stack (Stack K),
(3) Baghouse #12 exhaust stack (Stack X),
(4) Baghouse #15 exhaust stack (Stack AE), and
(5) Baghouse #16 exhaust stack (Stack AG),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.6.8 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) Baghouse #3

The Permittee shall record the pressure drop across Baghouse #3, at least once per day, when the associated Shot Blast Machines are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #3 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #3 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(b) Baghouse #6

The Permittee shall record the pressure drop across Baghouse #6, at least once per day when the associated Shot Blast Machines and Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #6 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #6 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(c) Baghouse #12

The Permittee shall record the pressure drop across Baghouse #12, at least once per day when the associated Shot Blast Machines and Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #12 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #12 is a pressure drop range between 4.0 and 10.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(d) Baghouse #15

The Permittee shall record the pressure drop across Baghouse #15, at least once per day when the associated Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #15 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #15 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.
(e) Baghouse #16

The Permittee shall record the pressure drop across Baghouse #16, at least once per day, when the associated Shot Blast Machines and Grinders are in operation when venting to the atmosphere. When for any one reading, the pressure drop across Baghouse #16 is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse #16 is a pressure drop range between 2.0 and 8.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(f) SB-10 blow-off chamber fabric filter control device

The Permittee shall record the pressure drop across SB-10 blow-off chamber fabric filter control device, at least once per day, when the associated blow-off chamber is in operation. When for any one reading, the pressure drop across SB-10 blow-off chamber fabric filter control device is outside the normal range, the Permittee shall take reasonable response. The normal range for SB-10 blow-off chamber fabric filter control device is a pressure drop range between 0.1 and 6.1 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(g) MAUS Grinders #1 and #2 fabric filter control device

The Permittee shall record the pressure drop across MAUS Grinders #1 and #2 fabric filter control device, at least once per day, when the associated grinders are in operation. When for any one reading, the pressure drop across MAUS Grinders #1 and #2 fabric filter control device is outside the normal range, the Permittee shall take reasonable response. The normal range for MAUS Grinders #1 and #2 fabric filter control device is a pressure drop range between 0.5 and 7.5 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(h) Baghouse ZZ

The Permittee shall record the pressure drop across Baghouse ZZ, at least once per day, when any of the associated Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, is in operation. When for any one reading, the pressure drop across Baghouse ZZ is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse ZZ is a pressure drop range between 0.5 and 7.5 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(i) A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

(j) The instruments used for determining the pressure shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

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

D.6.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.6.1(a) – PSD Minor Limits, the
Permittee shall maintain records of the amount of cumulative total finished castings from each of the following Shot Blast Machines: SB-1 through SB-9.

(b) To document the compliance status with Condition D.6.1.2(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of total finished castings from the Hose Blast system for Shot Blast Machine SB-8.

(c) To document the compliance status with conditions D.6.1.3(a) – PSD Minor Limits, the Permittee shall maintain records of the total finished casting from the ABB and FANUC grinders.

(d) To document the compliance status with Condition D.6.1.4(a) - PSD Minor Limit, the Permittee shall maintain monthly records of casting throughput to the SB 10 Blow-Off Chamber.

(e) To document the compliance status with Condition D.6.1(e) – PSD Minor Limits, the Permittee shall maintain records of the amount of total finished castings from Shot Blast Machine SB-9.

(f) To document the compliance status with Condition D.6.1.5(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of total finished castings from MAUS automatic grinders #1 and #2.

(g) To document the compliance status with Condition D.6.6 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the baghouse #3, baghouse #6, baghouse #12, baghouse #15 and baghouse #16 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(h) To document the compliance status with Condition D.6.7– Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #3, baghouse #6, baghouse #12, baghouse #15, baghouse #16, the blow-off chamber fabric filter control device, the MAUS automatic grinders #1 and #2 fabric filter control device, and Baghouse ZZ. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

(i) To document the compliance status with Condition D.6.1.6(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of total throughput of finished metal processed at Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 and the calculate PM, PM10 and PM2.5 emissions.

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

D.6.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.6.1(a) – PSD Minor Limits, Condition D.6.1(e) - PSD Minor Limits, Condition D.6.1.2(a) – PSD Minor Limits, Condition D.6.1.3(a) – PSD Minor Limits, Condition D.6.1.4(a) - PSD Minor Limits, Condition D.6.1.5(a) - PSD Minor Limits, and Condition D.6.1.6(a) – PSD Minor Limits shall be submitted within thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
### SECTION D.7 FACILITY OPERATION CONDITIONS

#### Facility Description [326 IAC 2-7-5(14)]

1. **Phenolic Urethane Core Making Line #9 (also referred to as Core Making Line #9)**

   One (1) Phenolic Urethane Core Making Line #9, constructed in 2002 as a hotbox process and modified in 2008 to be a phenolic process, with a nominal sand throughput of 18.0 tons of sand per hour. The Phenolic Urethane Core Making line #9 consists of the following emission units:

   a. One (1) Core Sand Handling Process, with a nominal sand throughput of 18.0 tons of sand per hour:

      1. One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.
      2. One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Sand Hopper #9.
      3. One (1) Sand Hopper #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.
      4. One (1) electric Sand Heater #9, constructed in 2002, with particulate emissions captured and controlled by Baghouse Z, exhausting through Stack Z.

   b. One (1) Sand Mixer #9, constructed in 2002 and modified in 2008, with a nominal throughput of 18 tons of sand per hour. Emissions from the Sand Mixer #9 are uncontrolled.

   c. Three (3) Core Machines, constructed in 2002 and modified in 2008, three (3) Core Wash Dip Tanks and one (1) natural gas fired Core Oven:

      1. One (1) Phenolic Urethane Core Machine #31 and its corresponding Core Wash Dip Tank #31 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

         Emissions from the Phenolic Urethane Core Machine #31 are uncontrolled. Emissions from the Core Wash Dip Tank #31 are uncontrolled.

      2. One (1) Phenolic Urethane Core Machine #32, and its corresponding Core Wash Dip Tank #32 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

         Emissions from the Phenolic Urethane Core Machine #32 are uncontrolled. Emissions from the Core Wash Dip Tank #32 are uncontrolled.

      3. One (1) Phenolic Urethane Core Machine #33, and its corresponding Core Wash Dip Tank #33 and natural gas fired Core Oven #10, each with a nominal throughput of 4.5 tons of sand per hour.

         Emissions from the Phenolic Urethane Core Machine #33 are uncontrolled. Emissions from the Core Wash Dip Tank #33 are uncontrolled.

The natural gas fired Core Oven #10 has a maximum heat input capacity of
6.0 million British thermal units (MMBtu) per hour.

(d) One (1) electric Phenolic Urethane Core Oven #5.

Emissions from the Phenolic Urethane Core Oven #5 are uncontrolled.

(e) One (1) natural gas fired Core Oven #11, constructed in 2011, has a maximum heat input capacity of 3.0 million British thermal units (MMBtu) per hour.

Emissions from the Phenolic Urethane Core Oven #11 are uncontrolled.

(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.7.1 VOC Minor Limits [326 IAC 2-2] [326 IAC 8-1-6]

In order to render 326 IAC 2-2 and 326 IAC 8-1-6 not applicable, The Permittee shall comply with the following requirements:

(a) The amount of resin usage in the Phenolic Urethane Core Making Line #9 operations shall not exceed 295,000 pounds of resin per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) The amount of catalyst usage in the Phenolic Urethane Core Making Line #9 operations shall not exceed 32,935 pounds of catalyst per twelve (12) consecutive month period, with compliance determined at the end of the month.

(c) The VOC emissions from the Phenolic Urethane Core Making Operation shall not exceed 0.02904 pounds of noncatalyst VOC per pounds of resin.

Compliance with these limits, combined with potential VOC emissions from the core box cleaner, release agent, core wash, and core oven #10 will restrict the VOC emissions from the the Phenolic Urethane Core Making Line #9 to less than 25 tons per year. Therefore, the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction requirements) and 326 IAC 2-2 (PSD) are not applicable to the Phenolic Urethane Core Making Line #9.

D.7.2 PSD Minor Limits [326 IAC 2-2]

In order to render 326 IAC 2-2 not applicable, The Permittee shall comply with the following requirements:

(a) The amount of sand used in the Phenolic Urethane Core Making Line #9 shall not exceed 12,000 tons of sand per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Total PM emissions from the Phenolic Urethane Core Making Line #9 shall not exceed 0.33 pounds per ton of sand.

(c) PM10 Limit (Stack Z)

Total PM10 emissions from the Phenolic Urethane Core Making Line #9 shall not exceed 0.065 pound per ton of sand.

Compliance with these limits will restrict the potential to emit from this modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM10 per year. Therefore, the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction requirements) and 326 IAC 2-2 (PSD) are not applicable to the Phenolic Urethane Core Making Line #9.
D.7.3 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast (NE) Sand Silo (Bin Vent)</td>
<td>38.7</td>
<td>42.2</td>
<td>(b)</td>
</tr>
<tr>
<td>Pneumatic Sand Transporter #1</td>
<td>38.7</td>
<td>42.2</td>
<td>(b)</td>
</tr>
<tr>
<td>Sand Hopper #9 and Sand Heater #9 (Baghouse Z, Stack Z)</td>
<td>18.0, each</td>
<td>28.4, each</td>
<td>(a)</td>
</tr>
<tr>
<td>Sand Mixer #9</td>
<td>18.0</td>
<td>28.4</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 \ P^{0.67} \]

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

(b) 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

D.7.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee’s obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.7.5 Emission Controls Operation

(a) Bin vent

The Northeast (NE) Sand Silo’s integrated bin vent for particulate emissions control shall be in operation at all times that the Northeast (NE) Sand Silo is being loaded.

(b) Baghouse Z

The Baghouse Z for particulate emissions control shall be in operation at all times that any of the following:

1. Sand Hopper #9, or
2. Sand Heater #9,

are in operation.

(c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to
normal, and the results of any response actions taken up to the time of notification.

D.7.6 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate the compliance status with Condition D.7.1(c), the Permittee shall perform VOC testing for Phenolic Urethane Core Making Line #9.

(b) In order to demonstrate the compliance status with Conditions D.7.2(b) and D.7.3, the Permittee shall perform PM testing on the stack exhaust for Baghouse Z when Sand Hopper #9 and Sand Heater #9 are in operation.

(c) In order to demonstrate the compliance status with Condition D.7.2(c), the Permittee shall perform emissions testing on the stack exhaust for Baghouse Z when Sand Hopper #9 and Sand Heater #9 are in operation to determine the PM$_{10}$ emissions for Sand Hopper #9 and Sand Heater #9.

PM$_{10}$ includes filterable and condensable PM.

(d) Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.7.7 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.7.8 Visible Emissions Notations

(a) Visible emission notations of the Baghouse Z exhaust stack (Stack Z) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

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

(c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
(d) A trained employee is an employee who has worked at the plant at least one (1) month
and has been trained in the appearance and characteristics of normal visible emissions
for that specific process.

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

D.7.9 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) The Permittee shall record the pressure drop across the Baghouse Z, at least once per
day, when the following are in operation:

(1) Sand Hopper #9, and/or
(2) Sand Heater #9.

When for any one reading, the pressure drop across the baghouse is outside the normal
range, the Permittee shall take reasonable response. The normal range for Baghouse Z
is a pressure drop range between 3.0 and 9.0 inches of water unless a different upper-
bound or lower-bound value for this range is determined during the most recent valid
stack test. A pressure reading that is outside the above mentioned range is not a
deviation from this permit. Failure to take response steps shall be considered a deviation
from this permit. Section C – Response to Excursions or Exceedances contains the
Permittee’s obligations with regard to responding to the reasonable response steps
required by this condition.

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

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

D.7.10 Record Keeping Requirements

(a) To document the compliance status with Condition D.7.1, the Permittee shall maintain
monthly records of the resin and catalyst usage for the Phenolic urethane Core Making
Line #9.

The Permittee shall keep records of suppliers’ data sheets and material safety data
sheets (MSDS) necessary to verify the VOC contents of the resin, core wash, release
agent and core box cleaner used.

(b) To document the compliance status with D.7.2(a) – PSD Minor Limits, the Permittee shall
maintain records of the amount of sand input to the Sand Mixer #9 on a monthly basis.

(c) To document the compliance status with Condition D.7.8, the Permittee shall maintain
daily records of visible emission notations of the Baghouse Z stack exhaust. The
Permittee shall include in its daily record when a visible emission notation is not taken
and the reason for the lack of visible emission notation (e.g. the process did not operate
that day).

(d) To document the compliance status with Condition D.7.9, the Permittee shall maintain the
daily records of the pressure drop across Baghouse Z. The Permittee shall include in its
daily record when a pressure drop reading is not taken and the reason for the lack of a
pressure drop reading, (e.g. the process did not operate that day).

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

D.7.11 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.7.1 (a) and (b) – VOC Minor Limits, and D.7.2(a) - PSD Minor Limits, shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
Facility Description [326 IAC 2-7-5(14)]

(12) Phenolic Urethane Core Making Line #1

One (1) Phenolic Urethane Core Making Line #1, approved for modification in 2013, with a nominal sand throughput of 15.0 tons of sand per hour. The Phenolic Urethane Core Making Line #1 consists of the following emission units:

(a) One (1) Core Sand Handling Process, approved for modification in 2013, with a nominal sand throughput of 15.0 tons of sand per hour:

   (1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

   (2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

   (3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

   (4) One (1) electric Phenolic Urethane Sand Heater #1, constructed in 1989 and approved for modification in 2013, for heating sand, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #1, constructed in 1989 and approved for modification in 2013, with a nominal throughput of 15.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #1 are uncontrolled.

(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and three (3) natural gas fired Core Ovens

   (1) One (1) Phenolic Urethane Core Machine #15, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #15 and natural gas fired Core Oven #1, constructed in 1986, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

   Emissions from the Core Wash Dip Tank #15 are uncontrolled.

   (2) One (1) Phenolic Urethane Core Machine #16, constructed in 1986 and modified to incorporate a larger blow plate in 2011, and its corresponding Core Wash Dip Tank #16 and natural gas fired Core Oven #1, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

   Emissions from the Core Wash Dip Tank #16 are uncontrolled.

   (3) One (1) Phenolic Urethane Core Machine #17, constructed in 1988, and its corresponding Core Wash Dip Tank #17 and natural gas fired Core Oven #17,
each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #17 are uncontrolled.

(4) One (1) Phenolic Urethane Core Machine #18, constructed in 1989, and its corresponding Core Wash Dip Tank #18 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #18 are uncontrolled.

(5) One (1) Phenolic Urethane Core Machine #19, constructed in 1989, and its corresponding Core Wash Dip Tank #19 and natural gas fired Core Oven #2, each with a nominal throughput of 7.0 tons sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #19 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #1 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and Phenolic Urethane Core Machine #19 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(13) Phenolic Urethane Core Making Line #2

One (1) Phenolic Urethane Core Making Line #2, with a nominal sand throughput of 3.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #2 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 3.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #1.

(3) One (1) Phenolic Urethane Core Sand Hopper #1, constructed in 1989, with particulate emissions controlled by Baghouse Q, exhausting through Stack Q.

(b) One (1) Phenolic Urethane Core Sand Mixer #2, constructed in 1987, with a nominal throughput of 3.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #2 are uncontrolled.
(c) Five (5) Core Machines, five (5) Core Wash Dip Tanks, and one (1) portable electric Core Oven

1) One (1) Phenolic Urethane Core Machine #8, constructed in 1968, and its corresponding Core Wash Dip Tank #8 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #8 are uncontrolled.

2) One (1) Phenolic Urethane Core Machine #9, constructed in 1968, and its corresponding Core Wash Dip Tank #9 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #9 are uncontrolled.

3) One (1) Phenolic Urethane Core Machine #12, constructed in 1978, and its corresponding Core Wash Dip Tank #12 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #12 are uncontrolled.

4) One (1) Phenolic Urethane Core Machine #13, constructed in 1979, and its corresponding Core Wash Dip Tank #13 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #13 are uncontrolled.

5) One (1) Phenolic Urethane Core Machine #14, constructed in 1992, and its corresponding Core Wash Dip Tank #14 and portable electric Core Oven #1, each with a nominal throughput of 3.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #14 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(14) Phenolic Urethane Core Making Line #3

One (1) Phenolic Urethane Core Making Line #3, with a nominal sand throughput of 7.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #3 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:
(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) electric Phenolic Urethane Sand Heater #3, constructed in 1980.

The particulate emissions from the Phenolic Urethane Sand Heater #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Phenolic Urethane Core Sand Mixer #3, constructed in 1980, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #3 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and two (2) natural gas fired Core Ovens

(1) One (1) Phenolic Urethane Core Machine #2, constructed in 1982, and its corresponding Core Wash Dip Tank #2 and natural gas fired Core Oven #3, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #2 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #4, constructed in 1981, and its corresponding Core Wash Dip Tank #4 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #4 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #5, constructed in 1968, and its corresponding Core Wash Dip Tank #5 and natural gas fired Core Oven #4, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #5 are uncontrolled.

Each natural gas fired Core Oven on Phenolic Urethane Core Making Line #3 has a maximum heat input capacity of 2.0 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic
Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(15) **Phenolic Urethane Core Making Line #4**

One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

1. One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

2. One (1) East (E) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

3. One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

4. One (1) enclosed Pneumatic Sand Transporter #7, approved in 2018 for construction, for transferring sand from the East (E) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

5. One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

   The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

6. One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:

   The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.


(b) One (1) Phenolic Urethane Core Sand Mixer #4, constructed in 1986, with a nominal throughput of 7.0 tons of sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #4 are uncontrolled.

(c) Two (2) Core Machines, one (1) Core Wash Dip Tank, and two (2) natural gas fired Core Ovens

1. One (1) Phenolic Urethane Core Machine #7, constructed in 1986 and modified to incorporate a larger blow plate in 2011, with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

2. One (1) Phenolic Urethane Core Machine #25, constructed in 1993, approved in 2018 for replacement, that contains two (2) core boxes that cannot be
operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(A) The natural gas fired Core Oven #8 has a maximum heat input capacity of 2.4 British thermal units (Btu) per hour.

(B) The natural gas fired Core Oven #25 has a maximum heat input capacity of 800,000 British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #7 and Phenolic Urethane Core Machine #25 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(16) **Phenolic Urethane Core Making Line #5**

One (1) Phenolic Urethane Core Making Line #5, with a nominal sand throughput of 5.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #5 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #3.

(3) One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #5, constructed in 1992, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #5 are captured and controlled by Baghouse Z, exhausting through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #5, constructed in 1992, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #5 are uncontrolled.
(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #21, constructed in 1992, and its corresponding Core Wash Dip Tank #21 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #21 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #22, constructed in 1992, and its corresponding Core Wash Dip Tank #22 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #22 are uncontrolled.

(3) One (1) Phenolic Urethane Core Machine #28, constructed in 1998, and its corresponding Core Wash Dip Tank #28 and natural gas fired Core Oven #9, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #28 are uncontrolled.

The natural gas fired Core Oven #9 on Phenolic Urethane Core Making Line #5 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of the Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(17) **Phenolic Urethane Core Making Line #8**

One (1) Phenolic Urethane Core Making Line #8, with a nominal sand throughput of 5.0 tons of sand per hour.

The Phenolic Urethane Core Making Line #8 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 5.0 tons of sand per hour:

(1) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(3) One (1) Phenolic Urethane Core Sand Hopper #8, constructed in 1997:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #8
are captured and controlled by Baghouse Z, exhausting through Stack Z.

(4) One (1) natural gas fired Phenolic Urethane Sand Heater #8, constructed in 1997, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The particulate emissions from the Phenolic Urethane Sand Heater #8 are captured and controlled by Baghouse Z, exhausts through Stack Z.

(b) One (1) Phenolic Urethane Core Sand Mixer #8, constructed in 1997, with a nominal throughput of 5.0 tons of core sand per hour and 0.185 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #8 are uncontrolled.

(c) Two (2) Core Machines, two (2) Core Wash Dip Tank, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #1, constructed in 1982, and its corresponding Core Wash Dip Tank #1 and natural gas fired Core Oven #27, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #1 are uncontrolled.

(2) One (1) Phenolic Urethane Core Machine #27, constructed in 1996, and its corresponding Core Wash Dip Tank #27 and natural gas fired Core Oven #27, each with a nominal throughput of 5.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

Emissions from the Core Wash Dip Tank #27 are uncontrolled.

The natural gas fired Core Oven #27 has a maximum heat input capacity of 1.6 million British thermal units (Btu) per hour.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the catalyst captured at the core box of Phenolic Urethane Core Machine #1 and Phenolic Urethane Core Machine #27 are controlled by Acid Scrubber AF, exhausting through Stack AF.

(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.8.1 BACT Requirements [326 IAC 2-2] [326 IAC 8-1-6]
Pursuant to 326 IAC 2-2 (PSD) and 326 IAC 8-1-6 (New Facilities General Reduction Requirements), Permittee shall comply with the following requirements:

(a) Sand Throughput Limit

(1) The amount of sand throughput to the Phenolic Urethane Core Making Line #1
shall not exceed 17,922 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(2) The amount of sand throughput to the Phenolic Urethane Core Making Line #2 shall not exceed 4,656 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(3) The amount of sand throughput to the Phenolic Urethane Core Making Line #3 shall not exceed 23,200 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(4) The amount of sand throughput to the Phenolic Urethane Core Making Line #4 shall not exceed 12,910 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(5) The amount of sand throughput to the Phenolic Urethane Core Making Line #5 shall not exceed 2,383 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(6) The amount of sand throughput to the Phenolic Urethane Core Making Line #8 shall not exceed 6,350 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) Mixers

The VOC emissions from each of the following mixers shall not exceed 0.185 pounds per ton of sand:

(1) Phenolic Urethane Core Sand Mixer #1,
(2) Phenolic Urethane Core Sand Mixer #2,
(3) Phenolic Urethane Core Sand Mixer #3,
(4) Phenolic Urethane Core Sand Mixer #4,
(5) Phenolic Urethane Core Sand Mixer #5, and
(6) Phenolic Urethane Core Sand Mixer #8.

(c) Core Machines

(1) The VOC emissions from the catalyst (DMIPA) or an equivalent captured at the following core machines shall be controlled by Acid Scrubber AF:

(A) Phenolic Urethane Core Making Line #1
Phenolic Urethane Core Machine #15, Phenolic Urethane Core Machine #16, Phenolic Urethane Core Machine #17, Phenolic Urethane Core Machine #18, and Phenolic Urethane Core Machine #19

(B) Phenolic Urethane Core Making Line #2
Phenolic Urethane Core Machine #8, Phenolic Urethane Core Machine #9, Phenolic Urethane Core Machine #12, Phenolic Urethane Core Machine #13, and Phenolic Urethane Core Machine #14

(C) Phenolic Urethane Core Making Line #3
Phenolic Urethane Core Machine #2, Phenolic Urethane Core Machine #4, and Phenolic Urethane Core Machine #5

(D) Phenolic Urethane Core Making Line #4
Phenolic Urethane Core Machine #7 and Phenolic Urethane Core
Machine #25

(E) Phenolic Urethane Core Making Line #5
Phenolic Urethane Core Machine #21, Phenolic Urethane Core Machine #22, and Phenolic Urethane Core Machine #28

(F) Phenolic Urethane Core Making Line #8
Phenolic Urethane Core Machine #1, and Phenolic Urethane Core Machine #27

The catalyst capture efficiency of Acid Scrubber AF shall be at least 89.3%. The catalyst control efficiency of Acid Scrubber AF shall be at least 99%. The overall catalyst control efficiency of Acid Scrubber AF shall be at least 88.4%.

(2) The VOC emissions from the amine catalysts (after the Acid Scrubber AF) shall not exceed 0.319 pounds per ton of sand.

(3) The VOC content of the core wash shall be limited to less than 0.12 pounds per gallon. The amount of annual usage of core wash shall not exceed 117,260 gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These usage limits are required to limit the potential to emit of VOC to less than 0.20 pounds per ton of sand.

(4) The VOC emissions from the core machines resins shall not exceed 0.541 pounds per ton of sand.

(5) The VOC content of the core machines cleaner shall be limited to less than 8.17 pounds per gallon. The amount of annual usage of core machines cleaner shall not exceed 1,188 gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These usage limits are required to limit the potential to emit of VOC to less than 0.144 pounds per ton of sand.

(6) The VOC content of the core release agent shall be limited to less than 6.15 pounds per gallon. The amount of annual usage of core release agent shall not exceed 1,150 gallons per twelve (12) consecutive month period with compliance determined at the end of each month. These usage limits are required to limit the potential to emit of VOC to less than 0.105 pounds per ton of sand.

D.8.2 PSD Minor Limits [326 IAC 2-2]

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

(a) The amount of sand throughput to the Phenolic Urethane Core Making Line #1 shall not exceed 17,922 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) The PM emission rate from the Core Sand Heater #1, controlled by Baghouse Q, shall not exceed 0.330 pounds per ton.

(c) The PM_{10} emission rate from the Core Sand Heater #1, controlled by Baghouse Q, shall not exceed 0.096 pounds per ton.

(d) The PM_{2.5} emissions from the Core Sand Heater #1, controlled by Baghouse Q, shall not exceed 0.096 pounds per ton.
Compliance with the limits above, combined with the uncaptured emissions and the limits in Conditions D.4.2(i) and D.6.1(e) through (i) will limit the modification to less than twenty-five (25) tons of PM per year, less than fifteen (15) tons of PM$_{10}$ per year, less than ten (10) tons of PM$_{2.5}$ per year, and less than 0.6 tons of lead (Pb) per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2013 modification to the shot blast machine (SB-9), core sand heater and mixer- core making line #1, and return sand surge bin - Herman 3 mold line.

D.8.3 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast (NE) Sand Silo (Bin Vent)</td>
<td>38.7</td>
<td>42.2</td>
<td>(b)</td>
</tr>
<tr>
<td>South (S) Sand Silo (Bin Vent)</td>
<td>42.0</td>
<td>43.0</td>
<td>(b)</td>
</tr>
<tr>
<td>Pneumatic Sand Transporter #1</td>
<td>38.7</td>
<td>42.2</td>
<td>(b)</td>
</tr>
<tr>
<td>Pneumatic Sand Transporter #2</td>
<td>42.0</td>
<td>43.0</td>
<td>(b)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Hopper #1 (Baghouse Q)</td>
<td>18.0</td>
<td>28.4</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Heater #1 (Baghouse Q)</td>
<td>15.0</td>
<td>25.2</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Hopper #3 (Baghouse U)</td>
<td>18.0</td>
<td>28.4</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Heater #3 (Baghouse U)</td>
<td>7.0</td>
<td>15.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Hopper #4 (Baghouse U)</td>
<td>7.0</td>
<td>15.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Heater #4 (Baghouse U)</td>
<td>7.0</td>
<td>15.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Heater #5 (Baghouse Z)</td>
<td>5.0</td>
<td>12.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Hopper #8 (Baghouse Z)</td>
<td>5.0</td>
<td>12.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Heater #8 (Baghouse Z)</td>
<td>5.0</td>
<td>12.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Mixer #1</td>
<td>15.0</td>
<td>25.2</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Mixer #2</td>
<td>3.0</td>
<td>8.6</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Mixer #3</td>
<td>7.0</td>
<td>15.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Mixer #4</td>
<td>7.0</td>
<td>15.1</td>
<td>(a)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Mixer #8</td>
<td>5.0</td>
<td>12.1</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

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

(b) 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:

\[
E = 55.0 P^{0.11} - 40 \quad \text{where} \quad E = \text{rate of emission in pounds per hour}; \quad \text{and} \quad P = \text{process weight rate in tons per hour}
\]

D.8.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the
preventive maintenance plan required by this condition.

**Compliance Determination Requirements**

**D.8.5 Emission Controls Operation [326 IAC 2-7-6(6)]**

<table>
<thead>
<tr>
<th></th>
<th>Bin vent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>The Northeast (NE) Sand Silo’s integrated bin vent for particulate emissions control shall be in operation at all times that the Northeast (NE) Sand Silo is being loaded.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Bin vent</th>
</tr>
</thead>
<tbody>
<tr>
<td>(b)</td>
<td>The South (S) Sand Silo’s integrated bin vent for particulate emissions control shall be in operation at all times that the South (S) Sand Silo is being loaded.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Baghouse Q</th>
</tr>
</thead>
<tbody>
<tr>
<td>(c)</td>
<td>The Baghouse Q for particulate emissions control shall be in operation at all times that any of the following:</td>
</tr>
<tr>
<td></td>
<td>(1) Phenolic Urethane Core Sand Hopper #1, or</td>
</tr>
<tr>
<td></td>
<td>(2) Phenolic Urethane electric Sand Heater #1,</td>
</tr>
<tr>
<td></td>
<td>are in operation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Baghouse U</th>
</tr>
</thead>
<tbody>
<tr>
<td>(d)</td>
<td>The Baghouse U for particulate emissions control shall be in operation at all times that any of the following:</td>
</tr>
<tr>
<td></td>
<td>(1) Phenolic Urethane Core Sand Hopper #3,</td>
</tr>
<tr>
<td></td>
<td>(2) Phenolic Urethane Core Sand Hopper #4,</td>
</tr>
<tr>
<td></td>
<td>(3) Phenolic Urethane electric Sand Heater #3, or</td>
</tr>
<tr>
<td></td>
<td>(4) Phenolic Urethane electric Sand Heater #4,</td>
</tr>
<tr>
<td></td>
<td>are in operation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Baghouse Z</th>
</tr>
</thead>
<tbody>
<tr>
<td>(e)</td>
<td>The Baghouse Z for particulate emissions control shall be in operation at all times that any of the following:</td>
</tr>
<tr>
<td></td>
<td>(1) Phenolic Urethane Core Sand Hopper #8, or</td>
</tr>
<tr>
<td></td>
<td>(2) Phenolic Urethane natural gas fired Sand Heater #5, or</td>
</tr>
<tr>
<td></td>
<td>(3) Phenolic Urethane electric Sand Heater #8</td>
</tr>
<tr>
<td></td>
<td>are in operation.</td>
</tr>
</tbody>
</table>

|   | In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification. |
(g) Acid Scrubber AF

The Acid Scrubber AF shall be in operation at all times when any of the following:

1. Phenolic Urethane Core Machine #1,
2. Phenolic Urethane Core Machine #2,
3. Phenolic Urethane Core Machine #4,
4. Phenolic Urethane Core Machine #5,
5. Phenolic Urethane Core Machines #7 - #9 and #12 - #19,
6. Phenolic Urethane Core Machine #21,
7. Phenolic Urethane Core Machine #25,
8. Phenolic Urethane Core Machine #27, or
9. Phenolic Urethane Core Machine #28,

are in operation.

D.8.6 Testing Requirements [326 IAC 2-7-6(1), (6)]

(a) Acid Scrubber AF

In order to demonstrate the compliance status with Condition D.8.1(c) – VOC PSD and BACT Requirements, the Permittee shall perform VOC testing (including amine catalysts emission rate, catalyst capture efficiency, and catalyst control efficiency) on a representative phenolic urethane core machine and the Acid Scrubber AF exhaust stack (Stack AF) utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. During the VOC tests, the Permittee shall monitor and record those parameters required to be measured and monitored by Condition D.8.9 – Scrubber Parametric Monitoring.

(b) Baghouse #Q

In order to demonstrate the compliance status with Conditions D.8.2(b), D.8.2(c), D.8.2(d), and D.8.3, the Permittee shall perform PM, PM10, and PM2.5 testing of Baghouse #Q (Stack Q), when core sand hopper #1 and core sand heater #1 are both in operation, no later than sixty (60) day after achieving the new maximum capacity, but no later than one hundred eighty (180) days after initial startup of the modified core sand heater #1. Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration. PM10 and PM2.5 includes filterable and condensable PM.

(c) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee’s obligation with regard to the performance testing required by this condition.

D.8.7 Scrubber Failure Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

D.8.8 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B – Emergency Provisions).
(b) For a single compartment baghouse controlling emissions from a batch process, the feed
to the process shall be shut down immediately until the failed unit has been repaired or
replaced. The emissions unit shall be shut down no later than the completion of the
processing of the material in the emission unit. Operations may continue only if the event
qualifies as an emergency and the Permittee satisfies the requirements of the emergency
provisions of this permit (Section B – Emergency Provisions).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with
abnormal visible emissions, by an opacity violation, or by other means such as gas temperature,
flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.8.9 Visible Emissions Notations

(a) Visible emission notations of the:

(1) Baghouse Q exhaust stack (Stack Q),
(2) Baghouse U exhaust stack (Stack U), and
(3) Baghouse Z exhaust stack (Stack Z),

shall be performed once per day during normal daylight operations when any of the
associated core sand hopper and core machines is in operation and exhausting to the
atmosphere. A trained employee shall record whether emissions are normal or
abnormal.

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

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

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

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

D.8.10 Scrubber Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(a) The Permittee shall record the flow rate and pH of the Acid Scrubber AF, at least once
per day when any of the associated core machines is in operation and venting to the
atmosphere.

(1) When for any one reading, the flow rate across Acid Scrubber AF is below a
minimum of 200 gallons per minute or a minimum flow rate established during
the latest stack test, the Permittee shall take reasonable response steps.

(2) When for any one reading, the pH across Acid Scrubber AF is greater a
maximum of 4.5 or a maximum pH established during the latest stack test, the
Permittee shall take reasonable response steps.
A flow rate or pH reading that is outside the above mentioned thresholds is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(b) The instruments used for determining the flow rate and pH shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.8.11 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) Baghouse Q

The Permittee shall record the pressure drop across the Baghouse Q, at least once per day, when the following are in operation:

(1) Phenolic Urethane Core Sand Hopper #1,
(2) Phenolic Urethane Sand Heater #1.

When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse Q is a pressure drop range between 1.0 and 9.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(b) Baghouse U

The Permittee shall record the pressure drop across the Baghouse U, at least once per day, when the following are in operation:

(1) Phenolic Urethane Core Sand Hopper #3,
(2) Phenolic Urethane Core Sand Hopper #4,
(3) Phenolic Urethane Sand Heater #3, and
(4) Phenolic Urethane Sand Heater #4.

When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse U is a pressure drop range between 1.0 and 7.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(c) Baghouse Z

The Permittee shall record the pressure drop across the Baghouse Z, at least once per day, when any of the following are in operation:

(1) Phenolic Urethane Core Sand Hopper #8, and
(2) Phenolic Urethane Sand Heater #5, and
(3) Phenolic Urethane Sand Heater #8.

When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse Z is a pressure drop range between 3.0 and 9.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.
(d) A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee’s obligations with regard to responding to the reasonable response steps required by this condition.

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

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

**D.8.12 Record Keeping Requirements**

(a) To document the compliance status with Condition D.8.1 – BACT Requirements, the Permittee shall maintain records of the amount of sand throughput for each core making line.

(b) To document the compliance status with Condition D.8.1 – BACT Requirements, the Permittee shall maintain records of the VOC content and usage amounts of:

1. core wash,
2. core machines cleaner, and
3. core release agent

for each core making line. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the VOC content of the core wash, core machines cleaner, and core release agent used.

(c) To document the compliance status with Condition D.8.2(a) - PSD Minor Limits, the Permittee shall maintain records of the amount of sand throughput for core making line #1.

(d) To document the compliance status with Condition D.8.9 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the Baghouse Q, Baghouse U, and Baghouse Z stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(e) To document the compliance status with Condition D.8.10 – Scrubber Parametric Monitoring, the Permittee shall maintain the daily records of the flow rate and pH for the Acid Scrubber AF. The Permittee shall include in its daily record when the flow rate or pH reading is not taken and the reason for the lack of flow rate of pH readings, (e.g. the process did not operate that day).

(f) To document the compliance status with Condition D.8.11 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse Q, Baghouse U and Baghouse Z. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

(g) Section C - General Record Keeping Requirements contains the Permittee’s obligations with regard to the record keeping required by this condition.

**D.8.13 Reporting Requirements**

A quarterly summary of the information to document the compliance status with Conditions D.8.1 (a), (c)(3), (c)(5), and (c)(6) – BACT Requirements and D.8.2(a) - PSD Minor Limits, shall be
submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
### SECTION D.9 FACILITY OPERATION CONDITIONS

#### Facility Description [326 IAC 2-7-5(14)]

**18. Shell Core Making Process**

One (1) Shell Core Sand Making Process, with a nominal sand throughput of 0.8 tons of sand per hour.

The Shell Core Sand Making Process consists of the following emission units:

(a) One (1) Shell Core Sand Handling Process, with a nominal sand throughput of 0.8 tons of sand per hour:

1. North (N) Shell Sand Silo and South (S) Shell Sand Silo, each constructed prior to 1977, with a capacity to provide coated sand to the two (2) Shell Core Sand Hoppers.
   
   Emissions from the North (N) Shell Sand Silo and South (S) Shell Sand Silo are uncontrolled.

2. Two (2) Shell Core Sand Hoppers, identified as Shell Core Sand Hopper #1 and Shell Core Sand Hopper #2, constructed prior to 1977, with a capacity to provide shell core sand to all Shell Core Machines.
   
   Emissions from the Shell Core Sand Hoppers are uncontrolled.

(b) Three (3) Core Machines, and Three (3) Core Wash Dip Tanks

1. One (1) Shell Core Machine #6, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #6, with a nominal throughput of 0.2 tons of sand per hour.
   
   Emissions from the Shell Core Machine #6 are uncontrolled.
   
   Emissions from the Shell Core Wash Dip Tank #6 are uncontrolled.

2. One (1) Shell Core Machine #7, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #7, with a nominal throughput of 0.3 tons of sand per hour.
   
   Emissions from the Shell Core Machine #7 are uncontrolled.
   
   Emissions from the Shell Core Wash Dip Tank #7 are uncontrolled.

3. One (1) Shell Core Machine #8, constructed prior to 1977, and its corresponding Shell Core Wash Dip Tank #8, with a nominal throughput of 0.3 tons of sand per hour.
   
   Emissions from the Shell Core Machine #8 are uncontrolled.
   
   Emissions from the Shell Core Wash Dip Tank #8 are uncontrolled.

(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.9.1 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North (N) Shell Sand Silo</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>South (S) Shell Sand Silo</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Shell Core Sand Hopper #1</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Shell Core Sand Hopper #2</td>
<td>0.4</td>
<td>2.2</td>
</tr>
<tr>
<td>Shell Core Machine #6</td>
<td>0.2</td>
<td>1.4</td>
</tr>
<tr>
<td>Shell Core Machine #7</td>
<td>0.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Shell Core Machine #8</td>
<td>0.3</td>
<td>1.8</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 P^{0.67} \]  

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

D.9.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee’s obligations with regard to the preventive maintenance plan required by this condition.
SECTION D.10 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]

(19) Air Set Core Making Process

One (1) Air Set Core Making Process, with a nominal sand throughput of 6.0 tons of sand per hour.

The Air Set Core Making Process consists of the following emission units:

(a) One (1) Air Set Core Sand Handling Process, with a nominal sand throughput of 6.0 tons of sand per hour:

1. One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.
2. One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Air Set Core Sand Hopper #3.
3. One (1) Phenolic Urethane Core Sand Hopper #3, constructed in 1980:
   The particulate emissions from the Phenolic Urethane Core Sand Hopper #3 are captured and controlled by Baghouse U, exhausting through Stack U.

(b) One (1) Air Set Core Sand Mixer #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.
   Emissions from the Air Set Core Sand Mixer #2 are uncontrolled.

(c) One (1) Air Set Core Machine #2, constructed prior to 1977, with a nominal throughput of 6.0 tons of sand per hour.
   Emissions from the Air Set Core Machine #2 are uncontrolled.

(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.10.1 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>South (S) Sand Silo (Bin Vent)</td>
<td>35.0</td>
<td>41.3</td>
<td>(b)</td>
</tr>
<tr>
<td>Pneumatic Sand Transporter #2</td>
<td>35.0</td>
<td>41.3</td>
<td>(b)</td>
</tr>
<tr>
<td>Phenolic Urethane Core Sand Hopper #3 (Baghouse U)</td>
<td>18.0</td>
<td>28.4</td>
<td>(a)</td>
</tr>
<tr>
<td>Air Set Core Sand Mixer #2</td>
<td>6.0</td>
<td>13.6</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 P^{0.67} \]

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

(b) 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

D.10.2 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.10.3 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Bin vent

The South (S) Sand Silo's integrated bin vent for particulate emissions control shall be in operation at all times that the South (S) Sand Silo is being loaded.

(b) Baghouse U

The Baghouse U for particulate emissions control shall be in operation at all times that the Phenolic Urethane Core Sand Hopper #3 is in operation.

(c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.10.4 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.
Compliance Monitoring Requirements [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

D.10.5 Visible Emissions Notations

(a) Visible emission notations of the Baghouse U exhaust (Stack U) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.10.6 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) The Permittee shall record the pressure drop across the Baghouse U, at least once per day, when the Phenolic Urethane Core Sand Hopper #3 is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse U is a pressure drop range between 1.0 and 7.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

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

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

D.10.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.10.5 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the Baghouse U stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(b) To document the compliance status with Condition D.10.6 – Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse U. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).
(c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the record keeping required by this condition.
Facility Description [326 IAC 2-7-5(14)]:

(21) Large Core Production Cell

One (1) Large Core Production Cell (ID LCC), permitted in 2006, which will initially be utilized as a phenolic urethane cold box core making operation.

The Large Core Production Cell consists of the following emission units:

(a) One (1) Northeast (NE) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(b) One (1) enclosed Pneumatic Sand Transporter #1, constructed in 1996, for transferring sand from the Northeast (NE) Sand Silo to the Phenolic Urethane Core Sand Hopper #8.

(c) One (1) Large Core Sand Weigh Hopper, permitted to be constructed in 2006, with a nominal throughput capacity of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Weigh Hopper are captured and controlled by Baghouse Q, exhausting through Stack Q.

(d) Large Core Production Cell Line #10, constructed in 2006, consisting of the following emission units:

(1) One (1) Sand / Resin Mixer #10, with a nominal throughput capacity of 15 tons of sand per hour and 34.18 pounds of resin per hour

Emissions from the Sand / Resin Mixer #10 are uncontrolled.

(2) One (1) Large Core Sand Holding Hopper #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Holding Hopper #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(3) One (1) electric Large Core Sand Heater #10, with a nominal sand throughput of 15 tons of sand per hour.

The particulate emissions from the Large Core Sand Heater #10 are captured and controlled by Baghouse Q, exhausting through Stack Q.

(4) One (1) Cold Box Phenolic Urethane Core Machine #29, with a nominal throughput capacity of 7 tons of cores per hour, using a nominal of 2.75 pounds of catalyst per ton of core sand;

(A) Operating Scenario #1

The current operating scenario, Operating Scenario #1, will use Resin #1 and Catalyst #1. Resin #1 is a phenolic urethane resin. Catalyst #1 is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

The VOC emissions from the Cold Box Phenolic Urethane Core Machine #29, when using Resin #1 and Catalyst #1, are captured at the core box and
controlled by Acid Scrubber AF, exhausting through Stack AF. The Acid Scrubber AF is a voluntary control for this processes and cannot be used to demonstrate compliance with any applicable VOC emission limitations.

(B) Operating Scenario #2
Operating Scenario #2 will use Resin #2 and Catalyst #2. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(C) Operating Scenario #3
Operating Scenario #3 will use Resin #3 and Catalyst #3. This system will be tested within 180 days of commencing operations using this resin/catalyst system.

(5) One (1) Core Wash Dip Tank #29, with a nominal capacity of 15 tons of cores per hour and 20.408 pounds of core wash per ton of core sand.

Emissions from the Core Wash Dip Tank #29 are uncontrolled.

(e) One (1) natural gas fired Core Oven #29, with a maximum heat input capacity of 6.0 million British thermal units (MMBtu) per hour.

Emissions from the natural gas fired Core Oven #29 are captured, but uncontrolled, and exhaust to Stack V-45.

(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.11.1 PSD Minor Limits [326 IAC 8-1-6]

In order to render 326 IAC 2-2 and 326 IAC 8-1-6 not applicable, the Permittee shall comply with the following requirements:

(a) The total volatile organic compound (VOC) emissions from the Sand/Resin Mixer #10, the Cold Box Phenolic Urethane Core Machine #29, and the Core Wash Dip Tanks #29 shall not exceed the following:

(1) 0.02904 pounds of noncatalyst VOC per pound of resin used;
(2) 1.0 pounds of VOC per pound of catalyst used;
(3) 0.02 pounds of VOC per pound of core wash used;
(4) 0.9 pounds of VOC per pound of release agent used; and
(5) 1.0 pounds of VOC per pound of core box cleaner used.

Where: Resin #1 and Catalyst #1 shall represent the current resin / catalyst system in use. Resin #2 / Catalyst #2 and Resin #3 / Catalyst #3 shall represent the other resin / catalyst systems in the Large Core Production Cell that may be used in the future. The VOC emission rates for the mixture of Resin #2 and Catalyst #2 and Resin #3 and Catalyst #3 shall be determined by VOC stack testing to be conducted within 180 days of commencing operations using either of these resin / catalyst systems.
(b) The amount of resin used in the Sand/Resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 combined shall not exceed 299,399.3 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) The amount of catalyst used in the Cold Box Phenolic Urethane Core Machine #29 shall not exceed 32,934.6 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) The amount of core wash used in the Core Wash Dip Tanks #29 shall not exceed 245,504.7 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) The amount of release agent used in the Cold Box Phenolic Urethane Core Machine #29 shall not exceed 1,397 pounds per twelve (12) consecutive month period, with compliance determined at the end of each month.

(f) The amount of core box cleaner used in the Cold Box Phenolic Urethane Core Machine #29 shall not exceed 1,725 pounds per twelve consecutive month period, with compliance determined at the end of each month.

A summary of the above VOC emission limits is included in the following table:

<table>
<thead>
<tr>
<th>Usage Limit (pounds per year)</th>
<th>VOC Content Limit (lb VOC from material per lb material)</th>
<th>VOC Emission Limit (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>299,399.3 (resin)</td>
<td>0.02904</td>
<td>4.35</td>
</tr>
<tr>
<td>32,934.6 (catalyst)</td>
<td>1.0</td>
<td>16.47</td>
</tr>
<tr>
<td>245,504.7 (core wash)</td>
<td>0.02</td>
<td>2.46</td>
</tr>
<tr>
<td>1,397 (release agent)</td>
<td>0.9</td>
<td>0.63</td>
</tr>
<tr>
<td>1,725 (core box cleaner)</td>
<td>1.0</td>
<td>0.86</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>24.77</strong></td>
</tr>
</tbody>
</table>

Compliance with these limitations shall limit emissions of VOC from the Large Core Production Cell (ID LCC) to less than 25 tons per year such that the requirements of 326 IAC 8-1-6 (New Facilities, General Reduction Requirements) do not apply.

Compliance with these limitations shall also limit emissions of VOC from the LCC such that the emissions increases from the existing emission units, based on the Actual to Projected Actual test in 326 IAC 2-2-2, plus the limited potential to emit from the LCC will be less than the PSD significant threshold of 40 tons per year. Therefore, the PSD requirements of 326 IAC 2-2-1 will not apply.

D.11.2 PSD Minor Limits [326 IAC 2-2]

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

(a) Total PM emissions from the Large Core Production Cell (ID LCC) shall not exceed 0.33 pounds PM per ton of sand throughput;

(b) Total PM\textsubscript{10} emissions from the Large Core Production Cell (ID LCC) shall not exceed 0.065 pound PM\textsubscript{10} per ton of sand throughput;
(c) The amount of throughput of sand to the Large Core Production Cell (ID LCC) shall not exceed 12,005 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with the above limitations shall limit PM and PM$_{10}$ emissions from the Large Core Production Cell (ID LCC) such that the emissions increases from the existing emission units, based on the Actual to Projected Actual test in 326 IAC 2-2-2, plus the limited potential to emit from the LCC will be less than the PSD significant thresholds of 25 and 15 tons per year, respectively. Therefore, the Large Core Production Cell (ID LCC) will not be major for Prevention of Significant Deterioration under 326 IAC 2-2-1.

D.11.3 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast (NE) Sand Silo (Bin Vent)</td>
<td>38.7</td>
<td>42.2</td>
<td>(b)</td>
</tr>
<tr>
<td>Pneumatic Sand Transporter #1</td>
<td>38.7</td>
<td>42.2</td>
<td>(b)</td>
</tr>
<tr>
<td>Large Core Sand Weigh Hopper (Baghouse Q)</td>
<td>15.0</td>
<td>25.2</td>
<td>(a)</td>
</tr>
<tr>
<td>Large Core Sand Holding Hopper #10 (Baghouse Q)</td>
<td>15.0</td>
<td>25.2</td>
<td>(a)</td>
</tr>
<tr>
<td>Large Core Sand Heater #10 (Baghouse Q)</td>
<td>15.0</td>
<td>25.2</td>
<td>(a)</td>
</tr>
<tr>
<td>Sand / Resin Mixer #10</td>
<td>15.0</td>
<td>25.2</td>
<td>(a)</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

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

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

(b) 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

D.11.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.11.5 Testing Requirements [326 IAC 2-7-6(1),(6)] [326 IAC 2-1.1-11]

(a) Resin #1 / Catalyst #1 (DMIPA) or an equivalent – Operating Scenario #1

In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #1 and the catalyst identified as Catalyst #1 (DMIPA) or an equivalent. Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.
(b) Resin #2 / Catalyst #2 – Operating Scenario #2

During the period within 60 days of achieving the nominal production rate but no later than 180 days after start-up of the Sand / resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 using the resin identified as Resin #2 and the catalyst identified as Catalyst #2, In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing in the event of a change in the operating scenario of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #2 and the catalyst identified as Catalyst #2. Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

(c) Resin #3 / Catalyst #3 – Operating Scenario #3

During the period within 60 days of achieving the nominal production rate but no later than 180 days after start-up of the Sand / resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29 using the resin identified as Resin #3 and the catalyst identified as Catalyst #2, In order to demonstrate the compliance status with Condition D.11.1 – VOC PSD Minor Limits, the Permittee shall perform VOC testing in the event of a change in the operating scenario of the uncontrolled exhaust for the Sand / Resin Mixer #10 and of the uncontrolled exhaust for the Cold Box Phenolic Urethane Core Machine #29 when using the resin identified as Resin #3 and the catalyst identified as Catalyst #3. Testing shall be conducted utilizing methods as approved by the Commissioner at least once every five (5) years from the date of the last valid compliance demonstration.

(d) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee's obligations with regard to the testing required by this condition.

D.11.6 VOC Emissions

Compliance with the VOC emission limit in Condition D.11.1 – VOC PSD Minor Limits shall be determined using the following equation:

\[
\text{Total VOC Emissions (lb/month)} = (\text{lb Resin # 1 used/month}) \times (0.02904 \text{ lb noncatalyst VOC/lb resin used})
+ (\text{lb Catalyst # 1 used/month}) \times (1.0 \text{ lb VOC/lb of catalyst used})
+ (\text{lb Resin # 2 used and Pounds Catalyst # 2 used/month}) \times (\text{VOC emission per unit of use (determined from stack test)})
+ (\text{lb Resin # 3 used and Pounds Catalyst # 3 used/month}) \times (\text{VOC emission per unit of use (determined from stack test)})
+ (\text{lb Core Wash used/month}) \times (0.02 \text{ lb VOC/lb of core wash used})
+ (\text{lb Release Agent used}) \times (0.9 \text{ lb VOC/lb of Release Agent used})
+ (\text{lb core box cleaner}) \times (1.0 \text{ lb VOC/lb of core box cleaner used})
\]

\(^1\) If catalyst used contains a VOC.

D.11.7 Emission Controls Operation [326 IAC 2-7-6(6)]

(a) Bin Vent
The Northeast (NE) Sand Silo’s integrated bin vent for particulate emissions control shall be in operation at all times that the Northeast (NE) Sand Silo is being loaded.

(b) Baghouse Q

In order to comply with Condition D.12.2 – PM and PM_{10} PSD Minor Limits and Condition D.12.3 – Particulate Emission Limitation, the Baghouse Q for particulate emissions control shall be in operation at all times that any of the following:

1. Large Core Sand Weigh Hopper,
2. Large Core Sand Holding Hopper #10, or
3. Large Core Sand Heater #10.

are in operation.

(c) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.11.8 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.11.9 Visible Emissions Notations

(a) Visible emission notations of the Baghouse Q exhaust (Stack Q) shall be performed once per day during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.

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

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

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

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

D.11.10 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

(a) Baghouse Q

The Permittee shall record the pressure drop across Baghouse Q, at least once per day, when the following are in operation:

1. Large Core Sand Weigh Hopper,
2. Large Core Sand Holding Hopper #10, or
3. Large Core Sand Heater #10.

When for any one reading, the pressure drop across the baghouse is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse Q is a pressure drop range between 1.0 and 9.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

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

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

D.11.11 Record Keeping Requirements

(a) To document the compliance status with Condition D.11.1 – VOC Minor Limits, the Permittee shall maintain records of the VOC content and usage amounts of:

1. resin,
2. catalyst,
3. core wash,
4. release agent, and
5. core box cleaner

for the Large Core Production Cell (ID LCC). Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the VOC content of the core wash, release agent, and core box cleaner used.

(b) To document the compliance status with Condition D.11.2 – PSD Minor Limits, the Permittee shall maintain records of the sand throughput to the Large Core Production Cell (ID LCC).

(c) To document the compliance status with Condition D.11.9 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the Baghouse
Q stack exhaust. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

(d) To document the compliance status with Condition D.11.10– Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across Baghouse Q. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

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

D.11.12 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.11.1 – VOC Minor Limits and Condition D.11.2(c) – PSD Minor Limits shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a "responsible official" as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
SECTION D.12  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(22) Phenolic Urethane Core Making Line #12

One (1) Phenolic Urethane Core Making Line #12, with a nominal sand throughput of 7.5 tons of sand per hour.

The Phenolic Urethane Core Making Line #12 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.5 tons of sand per hour:

(1) One (1) Phenolic Urethane Core Sand Hopper #12, approved in 2018 for construction:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(2) One (1) natural gas fired Phenolic Urethane Sand Heater #12, approved in 2018 for construction, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The natural gas emissions from the Phenolic Urethane Sand Heater #12 are not controlled.

The sand handling (non-natural gas) particulate emissions from the Phenolic Urethane Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(3) One (1) Weigh Hopper #12, approved in 2018 for construction, with a nominal throughput capacity of 7.5 tons of sand per hour.

The particulate emissions from the Phenolic Urethane Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(b) One (1) Phenolic Urethane Core Sand Mixer #12, approved in 2018 for construction, with a nominal throughput of 7.5 tons of core sand per hour and 0.10 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #12 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #35, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #35 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #35.

(2) One (1) Phenolic Urethane Core Machine #36, approved in 2018 for
construction, and its corresponding Core Wash Dip Tank #36 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #36.

(3) One (1) Phenolic Urethane Core Machine #37, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #37 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #37.

The natural gas fired Core Oven #12 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

Emissions from the natural gas fired Core Oven #12 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

(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)]**

<table>
<thead>
<tr>
<th>D.12.1 PSD Minor Limit - PM, PM10 and PM2.5 [326 IAC 2-2]</th>
</tr>
</thead>
<tbody>
<tr>
<td>In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) not applicable, the Permittee shall comply with the following:</td>
</tr>
<tr>
<td>(a) Sand Throughput</td>
</tr>
<tr>
<td>The total throughput of sand input at Phenolic Urethane Core Making Line #12 shall not exceed 10,100 tons of sand per twelve (12) consecutive month period, with compliance determined at the end of each month.</td>
</tr>
<tr>
<td>(b) PM</td>
</tr>
<tr>
<td>(1) The PM emissions after control from the units of the Phenolic Urethane Core Making Line #12 exhausting to Stack T shall not exceed 0.33 pound per ton of sand.</td>
</tr>
<tr>
<td>(2) The uncaptured and uncontrolled PM emissions from Phenolic Urethane Core Making Line #12 shall not exceed 0.036 pound per ton of sand.</td>
</tr>
<tr>
<td>(b) PM10</td>
</tr>
<tr>
<td>(1) The PM10 emissions after control from the units of the Phenolic Urethane Core Making Line #12 exhausting to Stack T shall not exceed 0.065 pound per ton of sand.</td>
</tr>
<tr>
<td>(2) The uncaptured and uncontrolled PM10 emissions from Phenolic Urethane Core Making Line #12 shall not exceed 0.005 pound per ton of sand.</td>
</tr>
</tbody>
</table>
(c) PM2.5

(1) The PM2.5 emissions after control from the units of the Phenolic Urethane Core Making Line #12 exhausting to Stack T shall not exceed 0.065 pound per ton of sand.

(2) The uncontrolled PM2.5 from Phenolic Urethane Core Making Line #12 shall not exceed 0.005 pound per ton of sand.

The following are the units of the Phenolic Urethane Core Making Line #12 that are controlled and exhausting to Stack T:

(1) Phenolic Urethane Core Sand Hopper #12;
(2) Phenolic Urethane Weigh Hopper #12; and
(3) Sand Heater #12 (non-natural gas) particulate emissions

Compliance with these limits, combined with the limited PM, PM10 and PM2.5 emissions from the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4 (Section D.6) shall ensure that the emission increases of PM, PM10, and PM2.5 from the 2018 Modification remain below twenty five (25) tons, fifteen (15) tons, ten (10) tons, and forty (40) tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2018 Modification (permitted in Significant Source Modification No. 085-39391-00003).

D.12.2 Volatile Organic Compounds Limitations [326 IAC 2-2] [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) and 326 IAC 8-1-6 (BACT) not applicable, the Permittee shall comply with the following:

(a) Sand Throughput Limit

The amount of sand throughput to the Phenolic Urethane Core Making Line #12 shall not exceed 10,100 tons of sand per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Mixer

The VOC emissions from the Phenolic Urethane Core Sand Mixer #12 shall not exceed 0.100 pounds per ton of sand.

(c) Core Machines

(1) The VOC emissions of the catalyst of the 3 core machines shall not exceed 2.25 pounds per ton of sand.

(2) There are no VOC emissions from the core wash.

(3) The VOC emissions from the resins of the 3 core machines shall not exceed 0.4 pounds per ton of sand.

(4) The VOC emissions from the core machine cleaner of the 3 core machines shall not exceed 0.144 pounds per ton of sand.

(5) The VOC emissions from the release agent of the 3 core machines shall not exceed 0.105 pounds per ton of sand.
The three (3) core machines are the following:

1. One (1) Phenolic Urethane Core Machine #35,
2. One (1) Phenolic Urethane Core Machine #36, and
3. One (1) Phenolic Urethane Core Machine #37.

Compliance with these limits shall ensure that the emission increases of VOC from the 2018 Modification remain below 25 tons per twelve (12) consecutive month period, and shall render 326 IAC 2-2 (PSD) and 326 IAC 8-1-6 not applicable to the 2018 Modification (permitted in Significant Source Modification No. 085-39391-00003).

D.12.3 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 Particulate Emission Limitations for Manufacturing Processes), the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenolic Urethane Core Sand Hopper #12</td>
<td>7.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Phenolic Urethane Weigh Hopper #12</td>
<td>7.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Sand Heater #12 (non-natural gas) particulate emissions</td>
<td>7.5</td>
<td>15.8</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 \times P^{0.67} \]

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

D.12.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

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

D.12.5 Particulate Matter Control

(a) Baghouse T

In order to comply with Conditions D.12.1 and D.12.3, the Baghouse T for particulate control shall be in operation at all times that any of the following units in Phenolic Urethane Core Making Line #12 is in operation.

1. Phenolic Urethane Core Sand Hopper #12;
2. Phenolic Urethane Weigh Hopper #12; and

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
D.12.6 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Conditions D.12.1 and D.12.3, not later than 180 days after the startup of Phenolic Urethane Core Making Line #12, the Permittee shall perform PM, PM10, and PM2.5 testing at Baghouse T (exhausting to Stack T), utilizing methods approved by the Commissioner.

This test shall be repeated at least once every 5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

PM10 and PM2.5 includes filterable and condensable PM.

(b) Section C – Performance Testing contains the Permittee’s obligation with regard to the performance testing required by this condition.

D.12.7 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.12.8 Parametric Monitoring

The Permittee shall record the pressure drop across Baghouse T at least once per day when any of the associated emission units is in operation. When, for any one reading, the pressure drop across a baghouse is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 1.0 and 9.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

D.12.9 Broken or Failed Bag Detection

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.12.10 Record Keeping Requirements

(a) To document the compliance status with Conditions 12.1 and D.12.2, the Permittee shall maintain records of the amount of sand throughput at Phenolic Urethane Core Making Line #12 and the calculated PM, PM10 and PM2.5 emissions.

(b) To document the compliance status with Condition D.12.2, the Permittee shall maintain records of the VOC content and usage amounts Phenolic Urethane Core Making Line #12 and the calculated VOC emissions.

(c) To document the compliance status with Condition D.12.8, the Permittee shall maintain daily records of pressure drop across Baghouse T. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

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

D.12.11 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.12.1 and D.12.2, shall be submitted within thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.
### SECTION D.13 FACILITY OPERATION CONDITIONS

#### Facility Description [326 IAC 2-7-5(14)]:

**Insignificant Activities**

1. Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6. [326 IAC 8-3-2]

2. The following equipment related to manufacturing activities no resulting in the emission of HAPs: brazing equipment, cutting torches, soldering equipment, welding equipment. [326 IAC 6-3-2]

3. Cutting 200,000 linear feet or less than one (1") plate or equivalent. [326 IAC 6-3-2]

(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.13.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]**

(a) Pursuant to 326 IAC 8-3-2(a), the Permittee shall ensure the following control equipment and operating requirements are met for the degreasing operations:

1. Equip the degreaser with a cover.

2. Equip the degreaser with a device for draining cleaned parts.

3. Close the degreaser cover whenever parts are not being handled in the degreaser.

4. Drain cleaned parts for at least fifteen (15) seconds or until dripping ceases.

5. Provide a permanent, conspicuous label that lists the operating requirements in subdivisions (3), (4), (6), and (7).

6. Store waste solvent only in closed containers.

7. Prohibit the disposal or transfer of waste solvent in such a manner that could allow greater than twenty percent (20%) of the waste solvent (by weight) to evaporate into the atmosphere.

(b) Pursuant to 326 IAC 8-3-2(b), the Permittee shall ensure the following additional control equipment and operating requirements are met for the degreasing operations:

1. Equip the degreaser with one (1) of the following control devices if the solvent is heated to a temperature of greater than forty-eight and nine-tenths (48.9) degrees Celsius (one hundred twenty (120) degrees Fahrenheit):

   (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.

   (B) A water cover when solvent used is insoluble in, and heavier than, water.
(C) A refrigerated chiller.

(D) Carbon adsorption.

(E) An alternative system of demonstrated equivalent or better control as those outlined in clauses (A) through (D) that is approved by the department. An alternative system shall be submitted to the U.S. EPA as a SIP revision.

(2) Ensure the degreaser cover is designed so that it can be easily operated with one (1) hand if the solvent is agitated or heated.

(3) If used, solvent spray:

(A) must be a solid, fluid stream; and

(B) shall be applied at a pressure that does not cause excessive splashing.

D.13.2 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the allowable particulate emission rate from the above listed processes shall not exceed the pounds per hour limitations as calculated with the following equation:

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

\[ E = 4.10 \ P^{0.67} \]

where \( E \) = rate of emission in pounds per hour; and \( P \) = process weight rate in tons per hour
SECTION E.1 NESHAP

Facility Description [326 IAC 2-7-5(14)]

(1) **Cupola Melt Furnace**

One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour. The Cupola Melt Furnace is equipped with two (2) electric holding furnaces.

Particulate emissions are captured and controlled by Wet Scrubber A and Wet Electrostatic Precipitator WESP (for NESHAP EEEEE compliance). Carbon monoxide emissions are captured and controlled by three (3) natural gas fired afterburners, each with a maximum heat input capacity of 2.2 million British thermal units (MMBtu) per hour. Emissions exhaust through Stack A.

Fugitive particulate emissions from the Cupola Charge Door are captured and controlled by Baghouse #14, exhausting through Stack AD.

(2) **Herman 2 Mold Line**

One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

Emissions from the Herman 2 Pouring Station are captured, but uncontrolled, and exhaust to the atmosphere through Vent V-19.

(3) **Herman 3 Mold Line**

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour.

Emissions from the Herman 3 Pouring Station are captured, but uncontrolled, and exhaust to the atmosphere through Vent V-10.

Under the Iron and Steel Foundries NESHAP (40 CFR 63, Subpart EEEEE), the following affected facilities are considered an existing affected source:

- Cupola Melt Furnace
- Herman 2 Pouring Station
- Herman 3 Pouring Station

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)
NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS [326 IAC 2-7-5(1)]


Pursuant to 40 CFR 63.7760, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1 for the affected facilities as specified in Table 1 of 40 CFR 63, Subpart EEEEE in accordance with schedule in 40 CFR 63 Subpart EEEEE.

E.1.2 Iron and Steel Foundries NESHAP Requirements [40 CFR Part 63, Subpart EEEEE]

Pursuant to 40 CFR 63.7683, the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart EEEEE (National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries), which are incorporated by reference as 326 IAC 20-92 and included as Attachment A:

1. 40 CFR 63.7680
2. 40 CFR 63.7681
3. 40 CFR 63.7682
4. 40 CFR 63.7683
5. 40 CFR 63.7690
6. 40 CFR 63.7700
7. 40 CFR 63.7710
8. 40 CFR 63.7720
9. 40 CFR 63.7730
10. 40 CFR 63.7731
11. 40 CFR 63.7732
12. 40 CFR 63.7733
13. 40 CFR 63.7734
14. 40 CFR 63.7735
15. 40 CFR 63.7736
16. 40 CFR 63.7740
17. 40 CFR 63.7741
18. 40 CFR 63.7742
19. 40 CFR 63.7743
20. 40 CFR 63.7744
21. 40 CFR 63.7745
22. 40 CFR 63.7746
23. 40 CFR 63.7747
24. 40 CFR 63.7750
25. 40 CFR 63.7751
26. 40 CFR 63.7753
27. 40 CFR 63.7760
28. 40 CFR 63.7761
29. 40 CFR 63.7765
30. Appendix - Table 1 to Subpart EEEEE of Part 63
Facility Description [326 IAC 2-7-5(14)]

(4) One (1) diesel fired emergency generator, constructed in 1968, with a maximum power output rate of 170 horsepower.

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

(5) One (1) gasoline generator, powering a portable maintenance welder, constructed in 2004, with a maximum power output rate of 23 horsepower.

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

(6) One (1) gasoline generator, powering a portable maintenance welder, constructed in 2011, with a maximum power output rate of 23 horsepower.

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

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

NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS (NESHAP) REQUIREMENTS [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to NESHAP [326 IAC 20-1] [40 CFR 63, Subpart A]

(a) Pursuant to 40 CFR 63.6665, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A - General Provisions, which are incorporated by reference as 326 IAC 20-1, as specified in Table 8 of 40 CFR 63, Subpart ZZZZ in accordance with the schedule in 40 CFR 63, Subpart ZZZZ.

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

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

and

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


(a) The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment B of this permit) for the diesel emergency generator, which are incorporated by reference as 326 IAC 20-82:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585
(3) 40 CFR 63.6590(a)(1)(ii) and (iv)
(4) 40 CFR 63.6595(a)(1) and (c)
(5) 40 CFR 63.6602
(6) 40 CFR 63.6605
(7) 40 CFR 63.6612
(8) 40 CFR 63.6615
(9) 40 CFR 63.6625(e)(2), (f), (h), and (i)
(10) 40 CFR 63.6635
(11) 40 CFR 63.6640(a), (b), (e), and (f)
(12) 40 CFR 63.6645(a)(5)
(13) 40 CFR 63.6650
(14) 40 CFR 63.6655
(15) 40 CFR 63.6660
(16) 40 CFR 63.6665
(17) 40 CFR 63.6670
(18) 40 CFR 63.6675
(19) Table 2c (item 1)
(20) Table 6 (item 9)
(21) Table 8

(b) The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment B of this permit) for the gasoline generator, constructed in 2004, which are incorporated by reference as 326 IAC 20-82:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585
(3) 40 CFR 63.6590(a)(1)(ii) and (iv)
(4) 40 CFR 63.6595(a)(1) and (c)
(5) 40 CFR 63.6602
(6) 40 CFR 63.6605
(7) 40 CFR 63.6612
(8) 40 CFR 63.6625(e)(1), (h), and (j)
(9) 40 CFR 63.6635
(10) 40 CFR 63.6640(a), (b), and (e)
(11) 40 CFR 63.6645(a)(5)
(12) 40 CFR 63.6650
(13) 40 CFR 63.6655
(14) 40 CFR 63.6660
(15) 40 CFR 63.6665
(16) 40 CFR 63.6670
(17) 40 CFR 63.6675
(18) Table 2c (item 7)
(19) Table 6 (item 9)
(20) Table 8

(c) The Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart ZZZZ (included as Attachment B of this permit) for the gasoline generator, constructed in 2011, which are incorporated by reference as 326 IAC 20-82:

(1) 40 CFR 63.6580
(2) 40 CFR 63.6585
(3) 40 CFR 63.6590(a)(2)(ii) and (c)
(4) 40 CFR 63.6595(a)(5)
(5) 40 CFR 63.6665
(6) 40 CFR 63.6670
(7) 40 CFR 63.6675
SECTION E.3  NSPS

Facility Description [326 IAC 2-7-5(14)]

(6) One (1) gasoline generator, powering a portable maintenance welder, constructed in 2011, with a maximum power output rate of 23 horsepower.

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

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

NEW SOURCE PERFORMANCE STANDARDS (NSPS) REQUIREMENTS [326 IAC 2-7-5(1)]

E.3.1 General Provisions Relating to NSPS [326 IAC 12-1] [40 CFR Part 60, Subpart A]

The Permittee shall comply with the provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1, except when otherwise specified in 40 CFR Part 60, Subpart JJJJ.

E.3.2 New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines [326 IAC 12] [40 CFR Part 60, Subpart JJJJ]

The gasoline generator, constructed in 2011, shall comply with the following provisions of 40 CFR Part 60, Subpart JJJJ (included as Attachment C of this permit):

(1) 40 CFR 60.4230
(2) 40 CFR 60.4233(a)
(3) 40 CFR 60.4234
(4) 40 CFR 60.4235
(5) 40 CFR 60.4236
(6) 40 CFR 60.4243(a)
(7) 40 CFR 60.4245(a)
(8) 40 CFR 60.4246
(9) 40 CFR 60.4248
(10) Table 3
SECTION F.1  FUGITIVE DUST CONTROL PLAN

Facility Description [326 IAC 2-7-5(14)]:

(1) Scrap Yard

(2) Herman 2 Mold Line

(a) One (1) electric holding furnace, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour, with emissions captured, but uncontrolled, and exhausting to the general building ventilation system.

(b) One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

Emissions from the Herman 2 Pouring Station are captured, but uncontrolled, and exhaust to the atmosphere through Vent V-19.

(c) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

Emissions from the Herman 2 Castings Cooling process are captured, but uncontrolled, and exhaust to the atmosphere through Vents V-8 and V-9.

(d) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour.

The particulate emissions from the Herman 2 Shakeout process are captured and controlled by Wet Collector #3, exhausting through Stack B.

(e) One (1) Herman 2 Sand Handling process, constructed prior to 1977, modified in 2009, and approved for modification in 2013, with a nominal throughput of 166 tons of mold and core sand per hour.

The Herman 2 Sand Handling process includes

(1) sand screening, sand cooling, water addition, sand mulling, and the ancillary equipment associated with each, all constructed prior to 1977, with particulate emissions captured and controlled by Baghouse #1, exhausting through Stack F, and Baghouse #13, exhausting through Stack Y.

and

(2) One (1) waste sand handling system supporting the Herman 2 Mold Line, consisting of one (1) Klein transport, constructed in 2009 and approved for modification in 2013, identified as:

(A) PF504-5, with a total nominal capacity of 12.0 tons per hour, with particulate emissions from sending operations captured and controlled by Baghouse #13, exhausting through Stack Y; and

(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)]

F.1.1 Scrap Yard Sweeping and Watering Requirements

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall:

(a) Perform sweeping of the scrap yard at least once per shift, whenever truck traffic is present or the cupola is operating; and

(b) Perform watering of the scrap yard at least once per day, whenever truck traffic is present or the cupola is operating, from April through October

unless:

(a) There is at least one tenth of an inch (1/10") of rainfall within the past twenty-four (24) hours; or

(b) There is at least one inch (1") of snow on the ground; or

(c) The ambient air temperature is below thirty-two degrees Fahrenheit (32F).

F.1.2 Herman 2 Mold Line Visible Emissions

Pursuant to 326 IAC 6-4, Fugitive Dust Emissions, and Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall eliminate visible emissions from the Herman 2 Sand Handling system, including the mold cooling, pouring, and shakeout operations, lasting sixty (60) or more seconds, traveling beyond the property boundaries at or near ground level.

If such visible emissions occur, the Permittee shall immediately take all necessary corrective actions, including but not limited to, production decrease or cessation of operation of the Herman 2 Mold Line.

F.1.3 Herman 2 Mold Line Blackwater Advanced Oxidation System

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall purchase, install, operate, and optimize a blackwater advanced oxidation system (Sonoperoxone® or equivalent system) on the Herman 2 Mold Line according to the timelines set forth in Agreed Order 2001-11054-A.

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

F.1.4 Scrap Yard Visual Observations

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006:

(a) The Permittee shall conduct visual observations of the scrap yard at least once per shift every day during daylight hours, whenever truck traffic is present or the cupola is operating. The visual observations shall be made at a time not less than two (2) hours after either sweeping or watering has been performed in accordance with Condition F.1.1 – Sweeping and Watering Requirements.

(b) Should any visible airborne dust be observed within ten (10) feet of the fence line, generated by either wind, vehicular traffic, or any other activities, the Permittee shall perform additional sweeping or watering, in accordance with Condition F.1.1 – Sweeping and Watering Requirements, immediately after the observation.

(c) Compliance with paragraphs (a) and (b) of this condition and Condition F.1.1 – Sweeping and Watering Requirements does not relieve the Permittee from its duty to comply with the fugitive dust requirements in Section C – Fugitive Dust Emissions and 326 IAC 6-4 nor reduce the Permittee's liabilities for any noncompliance with these requirements.
F.1.5 Herman 2 Mold Line Emissions Observations and Monitoring Requirements

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006:

(a) The Permittee shall conduct emissions observations of the Herman 2 cooling stacks at least once per shift during daylight hours in accordance with Condition F.1.2 – Herman 2 Mold Line Visible Emissions.

(b) The Permittee shall monitor the operating parameters of the Sonoperoxone® system at least once per shift, including, but not limited to,

1. The hydrogen peroxide usage in gallons per hour of muller operation,
2. The ozone generator plasma voltage, and
3. The ultrasonic power in watts

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

F.1.6 Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006:

(a) To document compliance with Condition F.1.1 – Scrap Yard Sweeping and Watering Requirements and Condition F.1.4 – Scrap Yard Visual Observations, the Permittee shall maintain records of:

1. The once per shift and daily visual observations;
2. The results of once per shift and daily visual observations;
3. The scrap yard sweeping events;
4. The scrap yard watering events; and
5. The weather conditions prohibiting sweeping of the paved areas and / or watering of the yard.

The records shall include the date and time of each observation or event.

(b) To document compliance with Condition F.1.2 – Herman 2 Mold Line Visible Emissions and Condition F.1.5 – Herman 2 Mold Line Emissions Observations and Monitoring Requirements, the Permittee shall record the emissions observations and results and the parametric monitoring and any corrective actions taken. These records shall include:

1. The date and time of each once per shift emissions observation;
2. The results of once per shift emissions observations; and
3. Documentation of the parametric monitoring and any corrective actions taken;

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

F.1.7 Notification Requirements

Pursuant to Agreed Order 2001-11054-A, issued on May 25, 2006, the Permittee shall notify the current OAQ Compliance Inspector by telephone and in writing via facsimile of:
(a) Every event of deviation from the requirements specified in conditions F.1.1 – Sweeping and Watering Requirements and F.1.4 – Scrap Yard Visual Observations;

(b) Each observation of visible dust leaving the property at or near ground level; and

(c) Every observation of visible emissions from the Herman 2 Sand Handling system, including the mold cooling, pouring, and shakeout operations, lasting sixty (60) or more seconds, traveling beyond the property boundaries at or near ground level;

within twenty-four (24) hours of the event or observation, or by the next business day.

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality, Compliance and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
PART 70 OPERATING PERMIT
CERTIFICATION

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T085-30768-00003

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

Please check what document is being certified:

☐ Annual Compliance Certification Letter
☐ Test Result (specify)
☐ Report (specify)
☐ Notification (specify)
☐ Affidavit (specify)
☐ Other (specify)

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

Signature:

Printed Name:

Title/Position:

Phone:

Date:
PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT

Source Name:  Dalton Corporation, Warsaw Manufacturing Facility
Source Address:  1900 E. Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.:  T085-30768-00003

This form consists of 2 pages       Page 1 of 2

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

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

Facility/Equipment/Operation:

Control Equipment:

Permit Condition or Operation Limitation in Permit:

Description of the Emergency:

Describe the cause of the Emergency:
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date/Time Emergency started</td>
<td></td>
</tr>
<tr>
<td>Date/Time Emergency was corrected</td>
<td></td>
</tr>
<tr>
<td>Was the facility being properly operated at the time of the emergency?</td>
<td>Y</td>
</tr>
<tr>
<td>Type of Pollutants Emitted</td>
<td>TSP, PM-10, SO₂, VOC, NOₓ, CO, Pb, other:</td>
</tr>
<tr>
<td>Estimated amount of pollutant(s) emitted during emergency</td>
<td></td>
</tr>
<tr>
<td>Describe the steps taken to mitigate the problem:</td>
<td></td>
</tr>
<tr>
<td>Describe the corrective actions/response steps taken:</td>
<td></td>
</tr>
<tr>
<td>Describe the measures taken to minimize emissions:</td>
<td></td>
</tr>
<tr>
<td>If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:</td>
<td></td>
</tr>
</tbody>
</table>

Form Completed by: ____________________________  
Title / Position: ____________________________  
Date: ____________________________  
Phone: ____________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T085-30768-00003  
Facilities: Cupola Charge Handling  
Parameters: Amount of Metal Charged  
Limits: 199,194 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.1)

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<thead>
<tr>
<th>QUARTER</th>
<th>YEAR</th>
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</thead>
<tbody>
<tr>
<td>Month</td>
<td>Column 1</td>
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<tr>
<td></td>
<td>This Month (tons)</td>
</tr>
</tbody>
</table>

☐ No deviation occurred in this quarter.

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

Submitted by: ________________________________  
Title / Position: ________________________________  
Signature: ________________________________  
Date: ________________________________  
Phone: ________________________________
### Part 70 Quarterly Report

**Source Name:** Dalton Corporation, Warsaw Manufacturing Facility  
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580  
**Part 70 Permit No.:** T 085-30768-00003  
**Facilities:** Cupola Melt Furnace  
**Parameters:** Amount of Metal Melted  
**Limits:** 152,078 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.2)

<table>
<thead>
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<th>Previous 11 Months (tons)</th>
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</tbody>
</table>

- [ ] No deviation occurred in this quarter.
- [ ] Deviations occurred in this quarter.  
  Deviation has been reported on: ________________

**Submitted By:** ____________________________________________

**Title/Position:** ____________________________________________

**Signature:** ________________________________________________

**Date:** ____________________________________________________

**Phone:** ____________________________________________________
# Part 70 Quarterly Report

**Source Name:** Dalton Corporation, Warsaw Manufacturing Facility  
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580  
**Part 70 Permit No.:** T 085-30768-00003  
**Facilities:** Herman 2 Sand Handling - Klein Transport  
**Parameters:** Amount of Core and Mold Sand Handled  
**Limits:** 106,000 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.3)

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- [ ] No deviation occurred in this quarter.  
- [ ] Deviations occurred in this quarter.  
  Deviation has been reported on: ________________

Submitted By: ________________________________  
Title/Position: ________________________________  
Signature: ________________________________  
Date: ________________________________  
Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Herman 2 and Herman 3 Sand Handling  
Parameters: Amount of Core and Mold Sand Handled  
Limits: 912,470 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Sections D.3 and D.4)

Quarter:       YEAR: _____

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Deviation has been reported on: _______________

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Title/Position: __________________________________________

Signature: _____________________________________________

Date: __________________________________________________

Phone: _________________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Herman 3 Mold Line
Parameters: Amount of Metal Throughput
Limits: 90,578 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.4)

| Quarter | YEAR: _____ |

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☐ Deviations occurred in this quarter.
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Title/Position: __________________________________________

Signature: ______________________________________________

Date: ___________________________________________________

Phone: _________________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Herman 3 Mold Line
Parameters: Amount of Sand Throughput
Limits: 543,470 tons of sand per twelve (12) consecutive month period, rolled on a
monthly basis, with compliance determined at the end of each month. (Section
D.4)

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Signature: _______________________________________

Date: ___________________________________________

Phone: _________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T085-30768-00003  
Facilities: Waste Sand Handling, Screening and Transport System  
Parameters: Amount of Sand Throughput  
Limits: 112,752 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.5)

Quarter: YEAR: _____

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Title/Position: _________________________________________

Signature: ____________________________________________

Date: ________________________________________________

Phone: _______________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Vibratory Shaker VB1
Parameters: Amount of Metal Throughput
Limits: 30,000 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.5)

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Date: ________________________________

Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

**Source Name:** Dalton Corporation, Warsaw Manufacturing Facility  
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580  
**Part 70 Permit No.:** T 085-30768-00003  
**Facilities:** Shot Blast Machines (SB-1 through SB-9)  
**Parameters:** Amount of Finished Castings  
**Limits:** 112,752 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

| Quarter: | YEAR: _____ |
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Submitted By: __________________________________________________________________

Title/Position: __________________________________________________________________

Signature: _____________________________________________________________________

Date: _________________________________________________________________________

Phone: _______________________________________________________________________

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

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Shot Blast Machine (SB-9)  
Parameters: Amount of Finished Castings  
Limits: 60,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Hose Blast System for Shot Blast Machine SB-8
Parameters: Amount of Finished Castings
Limits: 16,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

Quarter:                         YEAR: _____

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Deviation has been reported on: _______________________

Submitted By: ________________________________
Title/Position: ________________________________
Signature: ____________________________________
Date: ____________________________
Phone: ________________________________

(Restrict to one character per row)
Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Robotic Grinders ABB and FANUC
Parameters: Amount of Finished Castings
Limits: 15,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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Title/Position: ________________________________________________

Signature: ____________________________________________________

Date: _________________________________________________________

Phone: _______________________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

Part 70 Quarterly Report  

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: SB 10 Blow-Off Chamber  
Parameters: Casting Throughput  
Limits: 20,000 tons casting per twelve (12) consecutive month period, rolled on a monthly basis with compliance determined at the end of each month. (Section D.6)  

Quarter: YEAR: _____  

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Deviation has been reported on:  

Submitted By:  
Title/Position:  
Signature:  
Date:  
Phone:  

Permit Reviewer: Heath Hartley
PART 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: MAUS Automatic Grinders #1 and #2
Parameters: Casting Throughput
Limits: 21,000 tons of casting per twelve (12) consecutive month period, rolled on a monthly basis with compliance determined at the end of each month. (Section D.6)

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Deviation has been reported on: ______________

Submitted By: __________________________________________
Title/Position: _________________________________________
Signature: _____________________________________________
Date: _________________________________________________
Phone: _______________________________________________
# Part 70 Quarterly Report

**Source Name:** Dalton Corporation, Warsaw Manufacturing Facility  
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580  
**Part 70 Permit No.:** T 085-30768-00003  
**Facilities:** Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4  
**Parameters:** Total Amount of Finished Metal  
**Limits:** 17,500 tons metal per twelve (12) consecutive month period, with compliance determined at the end of each month. (Section D.6)

| Quarter | YEAR: _____
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**Submitted By:** ____________________________

**Title/Position:** __________________________

**Signature:** _____________________________

**Date:** _________________________________

**Phone:** _________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Phenolic Urethane Core Making Line #9 (Sand Mixer #9)
Parameters: Amount of Input Resin
Limits: 295,000 pounds of resin per twelve (12) consecutive month period, rolled on a monthly basis, and compliance determined at the end of each month. (Section D.7)

Quarter: YEAR: ____

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Signature: ________________________________

Date: ________________________________

Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Phenolic Urethane Core Making Line #9 (Sand Mixer #9)  
Parameters: Amount of Input Catalysts  
Limits: 32,935 pounds of catalysts per twelve (12) consecutive month period, rolled on a monthly basis, and compliance determined at the end of each month. (Section D.7)

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Submitted By: ________________________________
Title/Position: ________________________________
Signature: ________________________________
Date: ________________________________
Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Core Making Line #9
Parameters: Amount of Sand Throughput
Limits: 12,000 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.7)

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Submitted By: __________________________________________

Title/Position: _________________________________________

Signature: ____________________________________________

Date: _________________________________________________

Phone: _______
## Part 70 Quarterly Report

**Source Name:** Dalton Corporation, Warsaw Manufacturing Facility  
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580  
**Part 70 Permit No.:** T 085-30768-00003  
**Facilities:** Phenolic Urethane Core Making Line #1  
**Parameters:** Amount of Sand Throughput  
**Limits:** 17,922 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.8)

### Quarter: YEAR: ____

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  Deviation has been reported on: ______________________

**Submitted By:** __________________________________________

**Title/Position:** __________________________________________

**Signature:** ____________________________________________

**Date:** _________________________________________________

**Phone:** _______________________________________________
Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Phenolic Urethane Core Making Line #2
Parameters: Amount of Sand Throughput
Limits: 4,656 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.8)

Quarter:        YEAR: _____

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Title/Position: ____________________________________

Signature: _________________________________________

Date: _____________________________________________

Phone: ___________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Phenolic Urethane Core Making Line #3  
Parameters: Amount of Sand Throughput  
Limits: 23,200 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.8)

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Title/Position: ________________________________

Signature: ________________________________

Date: ________________________________

Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Phenolic Urethane Core Making Line #4
Parameters: Amount of Sand Throughput
Limits: 12,910 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.8)

Quarter: YEAR: ____

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☐ Deviations occurred in this quarter.

Deviation has been reported on: _____________

Submitted By: ________________________________

Title/Position: ________________________________

Signature: ________________________________

Date: ________________________________

Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

Part 70 Quarterly Report  

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Phenolic Urethane Core Making Line #8  
Parameters: Amount of Sand Throughput  
Limits: 6,350 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.8)  

<table>
<thead>
<tr>
<th>Quarter:</th>
<th>YEAR: ____</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (tons)</th>
<th>Previous 11 Months (tons)</th>
<th>12 Month Total (tons)</th>
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</table>

☐ No deviation occurred in this quarter.  
☐ Deviations occurred in this quarter.  
Deviation has been reported on:  

Submitted By:  
Title/Position:  
Signature:  
Date:  
Phone:  
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Phenolic Urethane Core Making Lines #1 through #5, #8  
Parameters: Amount of Core Wash Used  
Limits: 117,260 gallons of core wash per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core wash shall not exceed 0.12 pounds per gallon. Compliance determined at the end of each month. (Section D.8)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>YEAR: _____</th>
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<tbody>
<tr>
<td>Month</td>
<td>This Month (gallons)</td>
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</table>

- ☐ No deviation occurred in this quarter.
- ☐ Deviations occurred in this quarter.
  Deviation has been reported on: ______________________

Submitted By: ______________________________________

Title/Position: _____________________________________

Signature: _________________________________________

Date: ______________________________________________

Phone: _____________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Phenolic Urethane Core Making Lines #1 through #5, #8
Parameters: Amount of Core Machines Cleaner Used
Limits: 1188 gallons of cleaner per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core machines cleaner shall not exceed 8.17 pounds per gallon. Compliance determined at the end of each month. (Section D.8)

<table>
<thead>
<tr>
<th>Quarter:</th>
<th>YEAR: ___</th>
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</thead>
<tbody>
<tr>
<td>Month</td>
<td>This Month (gallons)</td>
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</table>

☐ No deviation occurred in this quarter.
☐ Deviations occurred in this quarter.

Deviation has been reported on:  

Submitted By:  
Title/Position:  
Signature:  
Date:  
Phone:  
Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Phenolic Urethane Core Making Lines #1 through #5, and #8
Parameters: Amount of Core Release Agent Used
Limits: 1150 gallons of release agent per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core release agent shall not exceed 6.15 pounds per gallon. Compliance determined at the end of each month. (Section D.8)

<table>
<thead>
<tr>
<th>Quarter:</th>
<th>YEAR: _____</th>
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</table>

<table>
<thead>
<tr>
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</tbody>
</table>

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

Submitted By: 
Title/Position: 
Signature: 
Date: 
Phone: 
# Part 70 Quarterly Report

**Source Name:** Dalton Corporation, Warsaw Manufacturing Facility  
**Source Address:** 1900 Jefferson Street, Warsaw, Indiana 46580  
**Part 70 Permit No.:** T 085-30768-00003  
**Facilities:** Sand/Resin Mixer #10 and the Cold Box Phenolic Urethane Core Machine #29  
**Parameters:** Amount of Resin Used  
**Limits:** 299,399.3 pounds resin per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the resin shall not exceed 0.02904 pounds of VOC per pound of resin. Compliance determined at the end of each month. (Section D.11)

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
<th>12 Month Total (pounds)</th>
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</tbody>
</table>

☐ No deviation occurred in this quarter.  
☐ Deviations occurred in this quarter.  
Deviation has been reported on: __________________

Submitted By: ____________________________________________  
**Title/Position:** ____________________________________________  
**Signature:** ____________________________________________  
**Date:** ____________________________________________  
**Phone:** ____________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Cold Box Phenolic Urethane Core Machine #29
Parameters: Amount of Catalyst Used
Limits: 32,934.6 pounds of catalyst per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the catalyst shall not exceed 1.0 pounds of VOC per pound of catalyst. Compliance determined at the end of each month. (Section D.11)

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
<th>12 Month Total (pounds)</th>
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</tbody>
</table>

☐ No deviation occurred in this quarter.
☐ Deviations occurred in this quarter.
Deviation has been reported on: 

Submitted By: 
Title/Position: 
Signature: 
Date: 
Phone: 
### INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

#### OFFICE OF AIR QUALITY

#### COMPLIANCE AND ENFORCEMENT BRANCH

## Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Core Wash Dip Tank #29  
Parameters: Amount of Core Wash Used  
Limits: 245,504.7 pounds of core wash per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core wash shall not exceed 0.02 pounds of VOC per pound of core wash. Compliance determined at the end of each month. (Section D.11)

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
<th>12 Month Total (pounds)</th>
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</table>

- No deviation occurred in this quarter.
- Deviations occurred in this quarter. Deviation has been reported on: __________________________

Submitted By: __________________________

Title/Position: __________________________

Signature: __________________________

Date: __________________________

Phone: __________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Cold Box Phenolic Urethane Core Machine #29  
Parameters: Amount of Release Agent Used  
Limits: 1,397 pounds of release agent per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the release agent shall not exceed 0.9 pounds of VOC per pound of release agent. Compliance determined at the end of each month. (Section D.11)

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
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</table>

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☐ Deviations occurred in this quarter.  
Deviation has been reported on:  

Submitted By:  
Title/Position:  
Signature:  
Date:  
Phone:  
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Cold Box Phenolic Urethane Core Machine #29  
Parameters: Amount of Core Box Cleaner Used  
Limits: 1,725 pounds of cleaner per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core box cleaner shall not exceed 1.0 pounds of VOC per pound of core box cleaner. Compliance determined at the end of each month. (Section D.11)

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
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</table>

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☐ Deviations occurred in this quarter.  
Deviation has been reported on: ______________________

Submitted By: ______________________________________________________

Title/Position: ______________________________________________________

Signature: ______________________________________________________

Date: ______________________________________________________

Phone: ______________________________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Large Core Production Cell (ID LCC)
Parameters: Amount of Sand Throughput
Limits: 12,005 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.11)

Quarter: YEAR: _____

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (tons)</th>
<th>Previous 11 Months (tons)</th>
<th>12 Month Total (tons)</th>
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</table>

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: ________________

Submitted By: ________________________________

Title/Position: ______________________________

Signature: ________________________________

Date: ________________________________

Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T 085-30768-00003  
Facilities: Phenolic Urethane Core Making Line #12  
Parameters: Total Amount of Sand Throughput  
Limits: 10,100 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.12)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>YEAR: ______</th>
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<tbody>
<tr>
<td>Month</td>
<td>This Month (tons)</td>
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</table>

- No deviation occurred in this quarter.

- Deviations occurred in this quarter.  
  Deviation has been reported on: ________________

Submitted By: ____________________________

Title/Position: ____________________________

Signature: ________________________________

Date: ______________________________________

Phone: ________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
COMPLIANCE AND ENFORCEMENT BRANCH  
PART 70 OPERATING PERMIT  
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT  

Source Name: Dalton Corporation, Warsaw Manufacturing Facility  
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580  
Part 70 Permit No.: T085-30768-00003  

Months: ________ to _________ Year: _________  

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

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<td>Probable Cause of Deviation:</td>
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<tr>
<td>Response Steps Taken:</td>
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</table>

This report shall be submitted quarterly based on a calendar year. Proper notice submittal under Section B –Emergency Provisions satisfies the reporting requirements of paragraph (a) of Section C-General Reporting. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked “No deviations occurred this reporting period”.

☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.

☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD
<table>
<thead>
<tr>
<th>Permit Requirement</th>
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<tbody>
<tr>
<td>Date of Deviation:</td>
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<tr>
<td>Response Steps Taken:</td>
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<tr>
<td>Probable Cause of Deviation:</td>
<td></td>
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<tr>
<td>Response Steps Taken:</td>
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<td></td>
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<tr>
<td>Probable Cause of Deviation:</td>
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<tr>
<td>Response Steps Taken:</td>
<td></td>
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</tr>
</tbody>
</table>

Form Completed by: ____________________________
Title / Position: ____________________________
Date: ____________________________
Phone: ____________________________
Source Description and Location

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Location: 1900 E. Jefferson Street, Warsaw, Indiana 46580
County: Kosciusko
SIC Code: 3321 (Gray and Ductile Iron Foundry)
Operation Permit No.: T 085-30768-00003
Operation Permit Issuance Date: August 20, 2012
Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-00003
Permit Reviewer: Rithika Reddy

Existing Approvals

The source was issued Part 70 Operating Permit Renewal No. T085-30768-00003 on August 20, 2012. The source has since received the following approvals:

(a) Significant Source Modification No. 085-33121-00003 issued on December 2, 2013;
(b) Significant Permit Modification No. 085-33147-00003, issued on December 18, 2013;
(c) Minor Source Modification No. 085-33865-00003 issued on December 29, 2013;
(d) Minor Permit Modification No. 085-33882-00003, issued on February 7, 2014;
(e) Administrative Amendment No. 085-35119-00003, issued on November 18, 2014;
(f) Administrative Amendment No. 085-36091-00003, issued on August 10, 2015;
(g) Significant Source Modification No. 085-38486-00003, issued on October 11, 2017; and
(h) Significant Permit Modification No. 085-38512-00003, issued on October 30, 2017.

The source submitted an application for a Part 70 Operating Permit Renewal on November 18, 2016 and is currently independent review.

County Attainment Status

The source is located in Kosciusko County.

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SO₂</td>
<td>Better than national standards.</td>
</tr>
<tr>
<td>CO</td>
<td>Unclassifiable or attainment effective November 15, 1990.</td>
</tr>
<tr>
<td>O₃</td>
<td>Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard.¹</td>
</tr>
<tr>
<td>PM₂.₅</td>
<td>Unclassifiable or attainment effective April 5, 2005, for the annual PM₂.₅ standard.</td>
</tr>
<tr>
<td>PM₁₀</td>
<td>Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM₂.₅ standard.</td>
</tr>
<tr>
<td>NO₂</td>
<td>Cannot be classified or better than national standards.</td>
</tr>
<tr>
<td>Pb</td>
<td>Unclassifiable or attainment effective December 31, 2011.</td>
</tr>
</tbody>
</table>

¹Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOₓ) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOₓ emissions are considered when
evaluating the rule applicability relating to ozone. Kosciusko County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM$_{2.5}$
Kosciusko County has been classified as attainment for PM$_{2.5}$. Therefore, direct PM$_{2.5}$, SO$_2$, and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

c) Other Criteria Pollutants
Kosciusko County has been classified as attainment or unclassifiable in Indiana for all the other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

### Fugitive Emissions

Since this source is classified as a secondary metal production plant it is considered one (1) of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1), 326 IAC 2-3-2(g), or 326 IAC 2-7-1(22)(B). Therefore, fugitive emissions are counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

### Greenhouse Gas (GHG) Emissions

On June 23, 2014, in the case of *Utility Air Regulatory Group v. EPA*, cause no. 12-1146, (available at [http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf](http://www.supremecourt.gov/opinions/13pdf/12-1146_4g18.pdf)) the United States Supreme Court ruled that the U.S. EPA does not have the authority to treat greenhouse gases (GHGs) as an air pollutant for the purpose of determining operating permit applicability or PSD Major source status. On July 24, 2014, the U.S. EPA issued a memorandum to the Regional Administrators outlining next steps in permitting decisions in light of the Supreme Court’s decision. U.S. EPA’s guidance states that U.S. EPA will no longer require PSD or Title V permits for sources “previously classified as ‘Major’ based solely on greenhouse gas emissions.”

The Indiana Environmental Rules Board adopted the GHG regulations required by U.S. EPA at 326 IAC 2-2-1(zz), pursuant to Ind. Code § 13-14-9-8(h) (Section 8 rulemaking). A rule, or part of a rule, adopted under Section 8 is automatically invalidated when the corresponding federal rule, or part of the rule, is invalidated. Due to the United States Supreme Court Ruling, IDEM, OAQ cannot consider GHG emissions to determine operating permit applicability or PSD applicability to a source or modification.

### Source Status - Existing Source

The table below summarizes the potential to emit of the entire source, prior to the proposed modification, after consideration of all enforceable limits established in the effective permits:

<table>
<thead>
<tr>
<th>Source-Wide Emissions Before Modification (ton/year)</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>Pb</th>
<th>Single HAP$^*$</th>
<th>Combined HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total for Source</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&lt;100</td>
<td>&gt;100</td>
<td>&gt;100</td>
<td>&lt;25</td>
<td>&gt;10</td>
<td>&gt;25</td>
</tr>
<tr>
<td>PSD Major Source Thresholds</td>
<td>100</td>
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<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>25</td>
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</tbody>
</table>

$^*$Single highest source-wide HAP.

(a) This existing source is a major stationary source, under PSD (326 IAC 2-2), because a PSD regulated pollutant, PM, PM$_{10}$, PM$_{2.5}$, SO$_2$, VOC, and CO, is emitted at a rate of 100 tons per year or more, and it is one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(ff)(1).
(b) This existing source is a major source of HAPs, as defined in 40 CFR 63.2, because HAP emissions are equal to or greater than ten (10) tons per year for a single HAP and equal to or greater than twenty-five (25) tons per year for a combination of HAPs. Therefore, this source is a major source under Section 112 of the Clean Air Act (CAA).

(c) These emissions are based on the TSD of Significant Source Modification No. 085-38486-00003, issued on October 11, 2017 and Significant Permit Modification No.: 085-38512-00003, issued on October 30, 2017.

### Description of Proposed Modification

The Office of Air Quality (OAQ) has reviewed an application, submitted by Dalton Corporation, Warsaw Manufacturing Facility on December 14, 2017, relating to the following:

I. **2018 Project**

(a) to install and operate a new Phenolic Urethane Core Making Line #12, including the following:

1. one (1) new core sand mixer (Mixer #12)
2. three (3) new core machines (Core Machines #35, #36, #37);
3. core oven #12; and
4. sand heater;

(b) to install and operate four (4) finishing stations (#ZZ1, #ZZ2, #ZZ3, and #ZZ4);

(c) to replace one (1) permitted core machine (Core Machine #25) at Phenolic Urethane Core Making Line #4;

(d) to install one (1) enclosed Pneumatic Sand Transporter #7 at Phenolic Urethane Core Making Line #4 and make additional descriptive changes; and

(e) to incorporate into the permit one (1) Phenolic Urethane Core Sand Weigh Hopper #4 at Phenolic Urethane Core Making Line #4, constructed in 1986.

The following is a list of the proposed new and modified emission units and pollution control device(s):

(I) One (1) enclosed Pneumatic Sand Transporter #7, approved in 2018 for construction, for transferring sand from the East (E) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

[Note: The emissions for Pneumatic Sand Transporter #7 are included within the emissions for the Core Sand Handling Process]

(II) Phenolic Urethane Core Making Line #12

One (1) Phenolic Urethane Core Making Line #12, with a nominal sand throughput of 7.5 tons of sand per hour. The Phenolic Urethane Core Making Line #12 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.5 tons of sand per hour:

1. One (1) Phenolic Urethane Core Sand Hopper #12, approved in 2018 for
construction:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(2) One (1) natural gas fired Phenolic Urethane Sand Heater #12, approved in 2018 for construction, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The natural gas emissions from the Phenolic Urethane Sand Heater #12 are not controlled.

The sand handling (non-natural gas) particulate emissions from the Phenolic Urethane Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(3) One (1) Weigh Hopper #12, approved in 2018 for construction, with a nominal throughput capacity of 7.5 tons of sand per hour.

The particulate emissions from the Phenolic Urethane Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(b) One (1) Phenolic Urethane Core Sand Mixer #12, approved in 2018 for construction, with a nominal throughput of 7.5 tons of core sand per hour and 0.10 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #12 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #35, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #35 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #35.

(2) One (1) Phenolic Urethane Core Machine #36, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #36 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #36.

(3) One (1) Phenolic Urethane Core Machine #37, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #37 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #37.

The natural gas fired Core Oven #12 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.
Emissions from the natural gas fired Core Oven #12 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

(III) One (1) core machine, identified as Core Machine #25, approved in 2018 for construction, with a maximum capacity of 7.0 tons per hour, using baghouse U as particulate control, and acid scrubber AF as VOC control, and exhausting to stack U.

This unit will replace the following permitted Core Machine #25:

One (1) Phenolic Urethane Core Machine #25, constructed in 1993, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand. Emissions from the Core Wash Dip Tank #25 are uncontrolled.

(IV) Four (4) manual casting finishing stations, identified as Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, approved in 2018 for construction, each with a maximum capacity of 1.0 ton per hour, using a fabric filter for control, and exhausting internally.

II. Vibratory Shaker VB1 PM and PM10 Re-Allocation Project

In addition, the Office of Air Quality (OAQ) has reviewed an application, submitted by Dalton Corporation, Warsaw Manufacturing Facility on November 6, 2017, requesting a modification of Part 70 Permit No. T085-30768-00003.

The Permittee has applied for re-allocation of PM and PM10 emissions and throughput limitations for existing vibratory shaker VB1. The current emissions limitations for this unit were included to keep the potential to emit from a 2011 source modification (SSM No. 085-29402-00003, issued on January 20, 2011) to add the vibratory shaker VB1, and Hose Blast system to less than twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM10 per year, in order to render 326 IAC 2-2 not applicable to the 2011 modification. The requested changes to the emissions limitations will still keep the potential to emit from the 2011 modification to less than twenty-five (25) tons of PM per year, and less than fifteen (15) tons of PM10 per year, rendering 326 IAC 2-2 (PSD) not applicable to the 2011 modification).

The Permittee has requested the following changes:

(1) to revise the throughput and emission rate limits for the vibratory shaker VB1 Re-Allocation Project:

<table>
<thead>
<tr>
<th>Unit - Vibratory Shaker VB1</th>
<th>Current Limit</th>
<th>Proposed Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Throughput</td>
<td>142,000 tons/yr</td>
<td>30,000 tons/yr</td>
</tr>
<tr>
<td>PM emission rate - stack</td>
<td>0.188 lb/ton</td>
<td>17.89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.941 lb/ton</td>
</tr>
<tr>
<td>PM emission rate - uncaptured</td>
<td>None</td>
<td>0.064 lb/ton</td>
</tr>
<tr>
<td>PM10 emission rate - stack</td>
<td>0.154 lb/ton</td>
<td>11.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.659 lb/ton</td>
</tr>
<tr>
<td>PM10 emission rate - uncaptured</td>
<td>None</td>
<td>0.045 lb/ton</td>
</tr>
</tbody>
</table>

(2) to redirect the emissions from the vibratory shaker VB1 from Baghouse #2, exhausting through Stack G to Baghouse #3, exhausting through Stack H. Baghouse #3 is a new baghouse.

The following is the emission unit that is affected by this modification:

One (1) vibratory shaker, identified as VB1, permitted in 2011, with a nominal capacity of
48.5 tons per hour, with particulate emissions captured and controlled by Baghouse #3, exhausting through Stack H.

III. Cupola, Herman #2 and Herman #3 Re-Allocation Project:

In addition, the Office of Air Quality (OAQ) has reviewed an application, submitted by Dalton Corporation, Warsaw Manufacturing Facility on November 6, 2017, requesting the following modification of Part 70 Permit No. T085-30768-00003.

The Permittee has applied for re-allocation of VOC, PM and PM10 emissions and throughput limitations for the existing Cupola, Herman #2 and Herman #3 emission units. The current emissions limitations for these units were included to keep the potential to emit from Significant Source Modification No. 085-14027-00003 issued on February 22, 2002 to less than forty tons (40) tons of VOC per year, twenty-five (25) tons of PM per year and less than fifteen (15) tons of PM10 per year, respectively, in order to render 326 IAC 2-2 not applicable to the 2002 modification. The requested changes to the emissions limitations will still keep the potential to emit from the 2002 modification to less than forty (40) tons of VOC per year, less than twenty-five (25) tons of PM per year, and less than fifteen (15) tons of PM10 per year, rendering 326 IAC 2-2 (PSD) not applicable to the 2002 modification (Cupola and Herman #2 and Herman #3 Re-Allocation Project). The detailed re-allocation emissions calculations are included in Appendix B of this Technical Support Document.

The Permittee has requested the following changes:

1) to revise the metal and sand throughput (tons/year) and emission rate limits (VOC, PM, and PM10 in lb/ton) as follows:

<table>
<thead>
<tr>
<th>Pollutant: VOC</th>
<th>Existing Limits</th>
<th>Proposed Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Throughput tons/yr</td>
<td>Emission Rate lb/ton</td>
</tr>
<tr>
<td>Melt Metal Throughput Limit</td>
<td>187,919 metal</td>
<td>0.009</td>
</tr>
<tr>
<td>Sand throughput limits</td>
<td>1,127,516 sand</td>
<td></td>
</tr>
<tr>
<td>Cupola Melt Furnace</td>
<td>187,919 metal</td>
<td>0.115</td>
</tr>
<tr>
<td>Herman 2 and Herman 3 Sand Handling</td>
<td>1,315,435 metal + sand</td>
<td>0.163</td>
</tr>
<tr>
<td>Herman 2 Pouring</td>
<td>187,919 metal</td>
<td>0.687</td>
</tr>
<tr>
<td>Herman 2 Casting Cooling</td>
<td>187,919 metal</td>
<td>0.115</td>
</tr>
<tr>
<td>Herman 2 Shakeout</td>
<td>1,315,435 metal + sand</td>
<td></td>
</tr>
</tbody>
</table>

Total (tons/yr) | 231.99 | 231.46 |
### Cupola, Herman #2 and Herman #3

<table>
<thead>
<tr>
<th>Pollutant: PM</th>
<th>Existing Limits</th>
<th>Proposed Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Throughput tons/yr</td>
<td>Emission Rate lb/ton</td>
</tr>
<tr>
<td>Metal Throughput limit</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Sand throughput limits</td>
<td>1,127,516</td>
<td>sand</td>
</tr>
<tr>
<td>Cupola Melt Furnace</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Herman 2 and Herman 3 Sand Handling</td>
<td>1,315,435</td>
<td>metal + sand</td>
</tr>
<tr>
<td>Herman 2 Pouring</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Herman 2 Casting Cooling</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Herman 2 Shakeout</td>
<td>1,315,435</td>
<td>metal + sand</td>
</tr>
<tr>
<td>Total (tons/yr)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant: PM10</th>
<th>Existing Limits</th>
<th>Proposed Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Throughput tons/yr</td>
<td>Emission Rate lb/ton</td>
</tr>
<tr>
<td>Metal Throughput limit</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Sand throughput limits</td>
<td>1,127,516</td>
<td>sand</td>
</tr>
<tr>
<td>Cupola Melt Furnace</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Herman 2 and Herman 3 Sand Handling</td>
<td>1,315,435</td>
<td>metal + sand</td>
</tr>
<tr>
<td>Herman 2 Pouring</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Herman 2 Casting Cooling</td>
<td>187,919</td>
<td>metal</td>
</tr>
<tr>
<td>Herman 2 Shakeout</td>
<td>1,315,435</td>
<td>metal + sand</td>
</tr>
<tr>
<td>Total (tons/yr)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following are the emission units that are affected by the Cupola and Herman #2 and Herman #3 Re-Allocation Project:

1. One (1) Cupola Melt Furnace, constructed prior to 1977, with a nominal capacity of 48.5 tons per hour of metal melted, and a maximum heat input capacity of 69.95 million British thermal units (MMBtu) per hour.

2. Herman 2 Mold Line
   
   a. One (1) Herman 2 Pouring Station, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and
(b) One (1) Herman 2 Castings Cooling process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vents V-8 and V-9.

(c) One (1) Herman 2 Shakeout process, constructed prior to 1977, with a nominal throughput of 37 tons of iron per hour and 166 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #3, exhausting through Stack B.

(d) One (1) Herman 2 Sand Handling process, constructed prior to 1977, modified in 2009, and approved for construction in 2013, with a nominal throughput of 166 tons of mold and core sand per hour.

(3) Herman 3 Mold Line

The volatile organic compound (VOC) emissions from the Herman 3 Mold line are reduced by one (1) Sonoperoxone® system (or an equivalent advanced oxidation system), sand system optimization, use of low VOC core resin binder materials, and automatic mold vent-off gas ignition.

(a) One (1) Herman 3 Pouring Station, constructed in 1991, with a nominal throughput of 28 tons of iron per hour and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled, and exhausting to the atmosphere through Vent V-10.

(b) One (1) Herman 3 Castings Cooling process, constructed in 1991, and modified in 2004, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with emissions captured, but uncontrolled and exhausting to the atmosphere through Vent V-12.

(c) One (1) Herman 3 Shakeout process, constructed in 1991, with a nominal throughput of 28 tons of iron per hour, and 165 tons of mold and core sand per hour, with particulate emissions captured and controlled by Wet Collector #1, exhausting to Stack D, Wet Collector #4, exhausting through Stack E, and Baghouse #11, exhausting through Stack W.

(d) One (1) Herman 3 Sand Handling process, constructed in 1991, modified in 2009, and approved for modification in 2013, with a nominal throughput of 165 tons of mold and core sand per hour.

**Enforcement Issues**

There are no pending enforcement actions related to the 2018 Project.

IDEM is aware that there is a pending enforcement action for the following:
(a) Vibratory Shaker VB1 Project and
(b) Cupola, Herman #2 and Herman #3 Re-Allocation Project.

IDEM is reviewing this matter and will take the appropriate action.

**Emission Calculations**

See Appendix A and Appendix B of this Technical Support Document for detailed emission calculations.
Pursuant to 326 IAC 2-1.1-1(12), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

The following table is used to determine the appropriate permit level under 326 IAC 2-7-10.5 and 326 IAC 2-7-11. This table reflects the PTE before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit. If the control equipment has been determined to be integral, the table reflects the PTE after consideration of the integral control device.

<table>
<thead>
<tr>
<th>2018 Project</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO2</th>
<th>VOC</th>
<th>CO</th>
<th>NOx</th>
<th>HAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenolic Urethane Core Making Line #12 - Stack</td>
<td>117.08</td>
<td>17.56</td>
<td>17.56</td>
<td>0</td>
<td>77.74</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
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<tr>
<td>Phenolic Urethane Core Making Line #12 - uncaptured</td>
<td>1.18</td>
<td>0.18</td>
<td>0.18</td>
<td>0</td>
<td>20.78</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Core Machine #25 Replacement - stack</td>
<td>109.27</td>
<td>16.39</td>
<td>16.39</td>
<td>0</td>
<td>90.11</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Core Machine #25 Replacement - uncaptured</td>
<td>1.10</td>
<td>0.17</td>
<td>0.17</td>
<td>0</td>
<td>30.23</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
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<tr>
<td>Core Ovens and sand heater #12 stack</td>
<td>0.02</td>
<td>0.09</td>
<td>0.09</td>
<td>0.01</td>
<td>0.06</td>
<td>0.95</td>
<td>1.14</td>
<td>0.00</td>
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<tr>
<td>Finishing Stations #ZZ1 - ZZ4 – stack – exhausting internally</td>
<td>294.86</td>
<td>29.49</td>
<td>29.49</td>
<td>0</td>
<td>0.00</td>
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<tr>
<td>Finishing Stations #ZZ1 - ZZ4 - uncaptured</td>
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<td>0.00</td>
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<td>0</td>
<td>0.01</td>
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<tr>
<td><strong>Total Emissions</strong></td>
<td><strong>526.50</strong></td>
<td><strong>64.17</strong></td>
<td><strong>64.17</strong></td>
<td><strong>0.01</strong></td>
<td><strong>218.92</strong></td>
<td><strong>0.95</strong></td>
<td><strong>1.14</strong></td>
<td><strong>1.02</strong></td>
</tr>
</tbody>
</table>

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

(a) Approval to Construct

Pursuant to 326 IAC 2-7-10.5(g)(4), a Significant Source Modification is required because this modification has the potential to emit PM/PM10/direct PM2.5 and VOC at greater than or equal to twenty-five (25) tons per year.

(b) Approval to Operate

Pursuant to 326 IAC 2-7-12(d)(1), this change to the permit is being made through a Significant Permit Modification because this modification does not qualify as a Minor Permit Modification or as an Administrative Amendment.

Pursuant to 326 IAC 2-7-12(d)(1), this change to the permit is being made through a Significant Permit Modification because this modification makes a significant changes to existing source specific limits and monitoring conditions.

### PSD Evaluation – Aggregation

Dalton Corporation, Warsaw Manufacturing Facility (Dalton) submitted two significant source modification applications in calendar year 2017 as follows:

1. SSM No. 085-38486-00003, issued on October 11, 2017, approval to construct two (2) MAUS Grinders.
2. SSM No. 085-39391-00003, permit application received on December 14, 2017, requesting approval to construct core making machines, mixers, core ovens, and finishing stations (also referred to as 2018 Project).

Dalton’s Justification:

Dalton has provided the following justification in support of the claim that these two modifications should be considered to be separate and independent project under PSD rules in 326 IAC 2-2, and therefore should not be aggregated for PSD evaluation:

(a) the two (2) projects evolved from different business decisions;
(b) the two (2) projects stand alone as managed projects and have unrelated project scopes; and
(c) the two (2) projects are not economically or technically dependent on each other.

Maus Grinders:

On October 25, 2016, Dalton ownership committed to the installation of a MAUS Grinder. The project justification showed a reduction in labor cost and an improvement in worker safety. The review of the benefits of the MAUS Grinder opened the potential for the installation of another MAUS Grinder within the next year. Dalton aggregated these two (2) MAUS Grinders as one project. These 2 grinders were permitted in October 2017. These MAUS grinders are used on products produced by existing core machines.

2018 Project:

During summer of 2017, Dalton began investigating the opportunity to acquire a foundry, and finalized the acquisition in October 2017. With this acquisition, Dalton decided to move some of the work to the plant at Warsaw.

The 2018 Project is necessary for work that was not known at the time of the evolution of the MAUS Project. The proposed finishing stations included in this 2018 Project are for work resulting from the acquisition of the foundry and relocation of those equipment to the Warsaw facility and are not being proposed for operations to reduce labor cost or improve worker safety. The proposed finishing stations add a new functionality to this plant. The products that will use these finishing stations are not suitable for use with the permitted MAUS Grinders.

Also, the MAUS Grinders were not necessary to add the proposed emission units recently acquired by Dalton and relocated to the Warsaw facility from the other foundry.

Conclusion:

Based on the above justification, IDEM has determined that the two (2) projects are independent of each other and should not be aggregated for evaluation under PSD rules (326 IAC 2-2).

| PSD Evaluation – Actual to Potential (ATP) and Actual to Projected Actual (ATPA) Emissions Test |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| 2018 Project                   | PM         | PM\(_{10}\) | PM\(_{2.5}\) | SO\(_2\) | VOC | CO | NO\(_x\) | Pb |
| Phenolic Urethane              |             |                |                |          |      |    |         |    |
| Core Making Line #12 - Stack   | 117.08       | 17.56              | 17.56             | 0       | 77.74 | 0 | 0       | -  |
| Phenolic Urethane              | 1.18        | 0.18              | 0.18             | 0       | 20.78 | 0 | 0       | -  |
### 2018 Project

<table>
<thead>
<tr>
<th>2018 Project</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>VOC</th>
<th>CO</th>
<th>NOx</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Machine #25</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replacement - stack</td>
<td>109.27</td>
<td>16.39</td>
<td>16.39</td>
<td>0</td>
<td>90.11</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Core Machine #25</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Replacement - uncaptured</td>
<td>1.10</td>
<td>0.17</td>
<td>0.17</td>
<td>0</td>
<td>30.23</td>
<td>0</td>
<td>0</td>
<td>-</td>
</tr>
<tr>
<td>Core Ovens and sand heater #12</td>
<td>0.02</td>
<td>0.09</td>
<td>0.09</td>
<td>0.01</td>
<td>0.06</td>
<td>0.95</td>
<td>1.14</td>
<td>-</td>
</tr>
<tr>
<td>Exhausting internally</td>
<td>294.86</td>
<td>29.49</td>
<td>29.49</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>1.01</td>
</tr>
<tr>
<td>Finishing Stations ZZ1 - ZZ4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>uncaptured</td>
<td>2.98</td>
<td>0.30</td>
<td>0.30</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0.01</td>
</tr>
<tr>
<td>Total Emissions</td>
<td>526.50</td>
<td>64.17</td>
<td>64.17</td>
<td>0.01</td>
<td>218.92</td>
<td>0.95</td>
<td>1.14</td>
<td>1.02</td>
</tr>
</tbody>
</table>

**Significant Levels**

<table>
<thead>
<tr>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>VOC</th>
<th>CO</th>
<th>NOx</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>15</td>
<td>10</td>
<td>40</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>0.6</td>
</tr>
</tbody>
</table>

(a) **“Hybrid” Applicability Test: ATP and ATPA**

The source opted to use a Hybrid applicability test, specified in 326 IAC 2-2-2(d)(5), to demonstrate that the modification is not subject to PSD major review. A Hybrid applicability test uses both the Actual to Potential (ATP) for new emissions units and Actual to Projected Actual (ATPA) for existing emissions units affected by the modification.

The source has provided information and emission calculations as part of the application for this Hybrid test. IDEM, OAQ reviewed the emission calculations provided by the source to verify the emissions factors and methodology used, but has not made any determination regarding the validity and accuracy of certain information such as actual throughput, actual usage and actual hours of operation.

(b) **New Emissions Units and Existing Emissions Units Affected by the Modification**

This project involves both new emissions units and existing emission units affected by the modification.

1. **New Emissions Unit**

   Pursuant to 326 IAC 2-2-1(t)(1), a new emissions unit is any emissions unit that is, or will be, newly constructed and that has existed for less than two (2) years from the date the emissions unit first operated.

   The following emissions unit(s), also identified as 2018 Project, are considered as new emissions units for this evaluation:

   1. One (1) enclosed Pneumatic Sand Transporter #7,
   2. One (1) Phenolic Urethane Core Making Line #12, consists of the following emission units:
      (A) One (1) Core Sand Handling Process,
          1. One (1) Phenolic Urethane Core Sand Hopper #12,
          2. One (1) natural gas fired Phenolic Urethane Sand Heater #12,
          3. One (1) Weigh Hopper #12,
      (B) One (1) Phenolic Urethane Core Sand Mixer #12,
      (C) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven
   3. One (1) core machine, identified as Core Machine #25,
(4) Four (4) manual casting finishing stations.

(2) Existing Emissions Unit Affected by the Modification
Dalton Corporation, Warsaw Manufacturing Facility certified in its application that there would be no upstream or downstream processes affected by the modification.

(c) Baseline Actual Emissions
(1) New Emissions Unit
For a new emissions unit, the baseline actual emissions for purposes of determining the emissions increase that will result from the initial construction and operation of the unit shall equal zero (0) and thereafter, for all other purposes, shall equal the unit's potential to emit.

(2) Existing Emissions Unit
Dalton Corporation, Warsaw Manufacturing Facility (Dalton) provided baseline actual emissions from any existing emission units as part of this ATPA applicability test. See Appendix C (ATPA) for details.

There are no increases in actual emissions from other processes within the foundry with the addition of the new core machines (Core Machines #34, #35, #36, #37). Dalton has the capability with the existing core making equipment capacity to fulfill the production needs of the foundry. The new core machines will make cores capable of production on Dalton's existing core machines and existing core production capacity meets the demands of the maximum production capacity of the foundry.

There are no increases in actual emissions from other processes within the foundry with the replacement core machine (Core Machine #25) at Dalton and Dalton has the capability with the existing core making equipment capacity to fulfill the production needs of the foundry. The replacement core machine (Core Machine #25) will make cores capable of production on Dalton's existing core machines and existing core production capacity meets the demands of the maximum production capacity of the foundry.

There are no increases in actual emissions from other processes within the foundry. Dalton has the capacity with the existing core drying equipment capacity to fulfill the production needs of the foundry. The new drying ovens will dry cores capable of being handled through Dalton's existing core ovens and the existing core drying capacity meets the demands of the maximum production capacity of the foundry.

There are no increases in actual emissions from any existing emission units. The finishing stations are at the end of the operation. The bottleneck of the foundry operation is the amount of metal melted and this will remain the constraint on the process overall.

The source will be required to keep records and report in accordance with the requirements of 326 IAC 2-2-8 (Prevention of Significant Deterioration (PSD) Requirements: Source Obligation).

(d) Hybrid Test: ATP and ATPA Summary
Since this project involves both new emissions units and existing emission units, pursuant to 326 IAC 2-2-2(d)(5), an Hybrid applicability test has been conducted. The emissions increase of the project is the sum of the emissions increase for each emissions unit, calculated using the Actual to Potential (ATP) evaluation for the new units and the Actual to Projected Actual (ATPA) evaluation for each existing emissions unit.

Pursuant to 326 IAC 2-2-1(pp)(A)(iii), the source may exclude, in calculating any increase in emissions that result from the particular project, that portion of the unit's emissions following the project that an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions and that are also unrelated to the particular project, including any increased utilization due to product demand growth.
Hybrid Applicability Test = $\text{ATP}_{\text{new unit}} + \text{ATPA}_{\text{existing unit}}$

Where:

$\text{ATP}_{\text{new unit}} = \text{PTE} - 0$

$\text{ATPA}_{\text{existing unit}} = \text{Projected Actual Emissions} - \text{Baseline Emissions}$

– Could Have Accommodated Emissions/Demand Growth

Exclusions

See Appendix C of this Technical Support Document for detailed emission calculations.

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM (tons/yr)</th>
<th>PM$_{10}$ (tons/yr)</th>
<th>PM$_{2.5}^*$ (tons/yr)</th>
<th>SO$_2$ (tons/yr)</th>
<th>VOC (tons/yr)</th>
<th>CO (tons/yr)</th>
<th>NO$_x$ (tons/yr)</th>
<th>Pb (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Emissions</td>
<td>20.69</td>
<td>5.75</td>
<td>10.17</td>
<td>0.09</td>
<td>25.84</td>
<td>12.20</td>
<td>14.52</td>
<td>0.43</td>
</tr>
<tr>
<td>Significant Levels</td>
<td>25</td>
<td>15</td>
<td>10</td>
<td>40</td>
<td>40</td>
<td>100</td>
<td>40</td>
<td>0.6</td>
</tr>
</tbody>
</table>

*PM$_{2.5}$ listed is direct PM$_{2.5}$.

(e) Conclusion

Based on this Hybrid applicability test, this proposed modification is not subject to PSD major review under 326 IAC 2-2-1, because the project emissions are less than the significance levels (i.e., the modification does not cause a significant emissions increase).

Federal Rule Applicability Determination

Due to the modification at this source, federal rule applicability has been reviewed as follows:

New Source Performance Standards (NSPS):

(a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this proposed modification.

National Emission Standards for Hazardous Air Pollutants (NESHAP):

(a) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR Part 63, 326 IAC 14, and 326 IAC 20) included in the permit for this proposed modification.

Compliance Assurance Monitoring (CAM):

(a) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is applicable to each existing pollutant-specific emission unit that meets the following criteria:

(1) has a potential to emit before controls equal to or greater than the major source threshold for the regulated pollutant involved;

(2) is subject to an emission limitation or standard for that pollutant (or a surrogate thereof); and

(3) uses a control device, as defined in 40 CFR 64.1, to comply with that emission limitation or standard.

(b) Pursuant to 40 CFR 64.2(b)(1)(i), emission limitations or standards proposed after November 15, 1990 pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act are exempt
from the requirements of CAM. Therefore, an evaluation was not conducted for any emission limitations or standards proposed after November 15, 1990 pursuant to a NSPS or NESHAP under Section 111 or 112 of the Clean Air Act.

(c) Pursuant to 40 CFR 64.2(b)(1)(iii), Acid Rain requirements pursuant to Sections 404, 405, 406, 407(a), 407(b), or 410 of the Clean Air Act are exempt emission limitations or standards. Therefore, CAM was not evaluated for emission limitations or standards for SO2 and NOx under the Acid Rain Program.

(d) Pursuant to 40 CFR 64.3(d), if a continuous emission monitoring system (CEMS) is required pursuant to other federal or state authority, the owner or operator shall use the CEMS to satisfy the requirements of CAM according to the criteria contained in 40 CFR 64.3(d).

The following table is used to identify the applicability of CAM to each existing emission unit and each emission limitation or standard for a specified pollutant based on the criteria specified under 40 CFR 64.2:

<table>
<thead>
<tr>
<th>Emission Unit/Pollutant</th>
<th>Control Device</th>
<th>Applicable Emission Limitation</th>
<th>Uncontrolled PTE (tons/year)</th>
<th>Controlled PTE (tons/year)</th>
<th>CAM Applicable (Y/N)</th>
<th>Large Unit (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenolic Urethane Core Making Line #12</td>
<td>BH</td>
<td></td>
<td>Uncontrolled</td>
<td>Controlled</td>
<td>CAM Applicable</td>
<td>Large Unit</td>
</tr>
<tr>
<td>PM</td>
<td>326 IAC 2-2</td>
<td>--</td>
<td>--</td>
<td>N^2</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM</td>
<td>326 IAC 6-3-2</td>
<td>&lt;100</td>
<td>--</td>
<td>N^1</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>326 IAC 2-2</td>
<td>&lt;100</td>
<td>--</td>
<td>N^1</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM2.5</td>
<td>326 IAC 2-2</td>
<td>&lt;100</td>
<td>--</td>
<td>N^1</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4</td>
<td>BH</td>
<td></td>
<td>Uncontrolled</td>
<td>Controlled</td>
<td>CAM Applicable</td>
<td>Large Unit</td>
</tr>
<tr>
<td>PM</td>
<td>326 IAC 2-2</td>
<td>--</td>
<td>--</td>
<td>N^2</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM</td>
<td>326 IAC 6-3-2</td>
<td>&lt;100</td>
<td>--</td>
<td>N^1</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>326 IAC 2-2</td>
<td>&lt;100</td>
<td>--</td>
<td>N^1</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>PM2.5</td>
<td>326 IAC 2-2</td>
<td>&lt;100</td>
<td>--</td>
<td>N^1</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

Uncontrolled PTE (tpy) and controlled PTE (tpy) are evaluated against the Major Source Threshold for each pollutant. Major Source Threshold for criteria pollutants (PM10, PM2.5, SO2, NOX, VOC and CO) is 100 tpy, for a single HAP ten (10) tpy, and for total HAPs twenty-five (25) tpy.

Under the Part 70 Permit program (40 CFR 70), PM is not a regulated pollutant.

PM^* For limitations under 326 IAC 6-3-2, 326 IAC 6.5, and 326 IAC 6.8, IDEM OAQ uses PM as a surrogate for the regulated air pollutant PM10. Therefore, uncontrolled PTE and controlled PTE reflect the emissions of the regulated air pollutant PM10.

N^1 CAM does not apply for pollutant because the uncontrolled PTE of pollutant is less than the major source threshold.

N^2 Under 326 IAC 2-2, PM is not a surrogate for a regulated air pollutant. Therefore, CAM does not apply to these emission units for the 326 IAC 2-2 PM limitation.

Controls: BH = Baghouse, C = Cyclone, DC = Dust Collection System, RTO = Regenerative or Recuperative Thermal Oxidizer, WS = Wet Scrubber, ESP = Electrostatic Precipitator

Emission units without air pollution controls are not subject to CAM. Therefore, they are not listed.

Based on this evaluation, the requirements of 40 CFR Part 64, CAM, are not applicable to any of the new units as part of this modification.

State Rule Applicability Determination

Due to the modification at this source, state rule applicability has been reviewed as follows:

326 IAC 2-2 (PSD)
PSD applicability is discussed under the Sections titled "PSD Evaluation – Aggregation" and "PSD Evaluation – Actual to Potential (ATP) and Actual to Projected Actual (ATPA) Emissions Test".
326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The operation of the proposed emission units will emit less than ten (10) tons per year for a single HAP and less than twenty-five (25) tons per year for a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

326 IAC 2-7-6(5) (Annual Compliance Certification)
The U.S. EPA Federal Register 79 FR 54978 notice does not exempt Title V Permittees from the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D), but the submittal of the Title V annual compliance certification to IDEM satisfies the requirement to submit the Title V annual compliance certifications to EPA. IDEM does not intend to revise any permits since the requirements of 40 CFR 70.6(c)(5)(iv) or 326 IAC 2-7-6(5)(D) still apply, but Permittees can note on their Title V annual compliance certifications that submission to IDEM has satisfied reporting to EPA per Federal Register 79 FR 54978. This only applies to Title V Permittees and Title V compliance certifications.

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
The PM emissions from the Phenolic Urethane Core Sand Mixer #12 is less than 0.551 lb per hour. Therefore, pursuant to 326 IAC 6-3-1, this unit is exempt from the requirements of 326 IAC 6-3-2.

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the emission units listed below shall not exceed the pounds per hour limitations specified in the table below:

(a) Phenolic Urethane Core Making Line #12:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenolic Urethane Core Sand Hopper #12</td>
<td>7.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Phenolic Urethane Weigh Hopper #12</td>
<td>7.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Sand Heater #12 (non-natural gas) particulate emissions</td>
<td>7.5</td>
<td>15.8</td>
</tr>
</tbody>
</table>

The Baghouse T shall be in operation at all times the following units are in operation, in order to comply with this limit:

(i) Phenolic Urethane Core Sand Hopper #12;
(ii) Phenolic Urethane Weigh Hopper #12; and
(iii) Sand Heater #12 (non-natural gas) particulate emissions.

(b) Finishing stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finishing Station #ZZ1</td>
<td>1.0</td>
<td>4.10</td>
</tr>
<tr>
<td>Finishing Station #ZZ2</td>
<td>1.0</td>
<td>4.10</td>
</tr>
<tr>
<td>Finishing Station #ZZ3</td>
<td>1.0</td>
<td>4.10</td>
</tr>
<tr>
<td>Finishing Station #ZZ4</td>
<td>1.0</td>
<td>4.10</td>
</tr>
</tbody>
</table>

The Baghouse ZZ shall be in operation at all times any of the Finishing stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4 is in operation, in order to comply with this limit.

The pound per hour limitation was calculated with the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:
\[
E = 4.10 \cdot P^{0.67}
\]

where \( E \) = rate of emission in pounds per hour, and 
\( P \) = process weight rate in tons per hour

326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations)
The proposed core ovens are not subject to 326 IAC 7-1.1-1 (Sulfur Dioxide Emission Limitations) because the potential to emit of sulfur dioxide from each of these natural gas combustion units is less than twenty-five (25) tons per year and ten (10) pounds per hour.

326 IAC 8-1-6 (VOC New Facilities; General Reduction Requirements)
326 IAC 8-1-6 is applicable to new emission units with potential VOC emissions of greater than 25 tons per year. The potential emissions of VOC from the proposed emission units are as follows:

<table>
<thead>
<tr>
<th>2018 Project</th>
<th>VOC (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenolic Urethane Core Making Line #12 - Stack</td>
<td>77.74</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #12 - uncaptured</td>
<td>20.78</td>
</tr>
<tr>
<td>Core Machine #25 Replacement - stack</td>
<td>90.11</td>
</tr>
<tr>
<td>Core Machine #25 Replacement - uncaptured</td>
<td>30.23</td>
</tr>
</tbody>
</table>

The potential VOC emissions from the Phenolic Urethane Core Making Line #12 and Core Machine #25 Replacement are each greater than 25 tons per year.

In order to render the requirements of 326 IAC 8-1-6 (BACT) not applicable, the Permittee shall comply with the following:

(a) Sand Throughput Limit
   (1) The amount of sand throughput to the Phenolic Urethane Core Making Line #12 shall not exceed 10,100 tons per 12 consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

(b) Mixers
   The VOC emissions from the following mixer shall not exceed 0.100 pounds per ton of sand:
   (1) Phenolic Urethane Core Sand Mixer #12

(c) Core Machines
   (2) The VOC emissions of the catalyst for Phenolic Urethane Core Making Line #12 shall not exceed 2.25 pounds per ton of sand.
   (3) There are no VOC emissions associated with the core wash.
   (4) The VOC emissions from the core machines resins shall not exceed 0.4 pounds per ton of sand.
   (5) The VOC emissions from the core machines not exceed 0.144 pounds per ton of sand.
   (6) The VOC emissions from the core release agent shall not exceed 0.105 pounds per ton of sand.

Compliance with these limits shall ensure that the emission increases of VOC from the Phenolic Urethane Core Making Line #12 remain below 25 tons per twelve (12) consecutive month period, and shall render 326 IAC 8-1-6 not applicable to Phenolic Urethane Core Making Line #12.
326 IAC 9 (Carbon Monoxide Emission)
This source does not belong to any of the source categories listed under 326 IAC 9-1-2. Therefore, the carbon monoxide emission limitations under this rule are not applicable.

326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

<table>
<thead>
<tr>
<th>Compliance Determination and Monitoring Requirements</th>
</tr>
</thead>
</table>

Permits issued under 326 IAC 2-7 are required to assure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions; however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs, IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source’s failure to take the appropriate corrective actions within a specific time period.

(a) The Compliance Determination Requirements applicable to this modification are as follows:

<table>
<thead>
<tr>
<th>Summary of Testing Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emission Unit</strong></td>
</tr>
<tr>
<td>Core Making Line #12 units:</td>
</tr>
<tr>
<td>(i) Phenolic Urethane Core Sand Hopper #12; (ii) Phenolic Urethane Weigh Hopper #12; and (iii) Sand Heater #12 (non-natural gas) particulate emissions.</td>
</tr>
<tr>
<td>Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4</td>
</tr>
</tbody>
</table>
Exhasuting internally

(b) The Compliance Monitoring Requirements applicable to this proposed modification are as follows:

<table>
<thead>
<tr>
<th>Control</th>
<th>Parameter</th>
<th>Frequency</th>
<th>Range</th>
<th>Excursions and Exceedances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baghouse T</td>
<td>Water Pressure Drop</td>
<td>Daily</td>
<td>1.0 to 9.0 inches</td>
<td>Response Steps</td>
</tr>
<tr>
<td>Baghouse ZZ</td>
<td>Water Pressure Drop</td>
<td>Daily</td>
<td>0.5 to 7.5 inches</td>
<td>Response Steps</td>
</tr>
</tbody>
</table>

These monitoring conditions are necessary because the Baghouse T for the Phenolic Urethane Core Making Line #12 and the Baghouse ZZ for the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4 must operate properly to assure compliance with 326 IAC 6-3 (Particulate Emissions Limitations for Manufacturing Processes) and in order to render the requirements of 326 IAC 2-2 (PSD) not applicable.

### Proposed Changes

The following changes listed below are due to the proposed modification. Deleted language appears as **strikethrough** text and new language appears as **bold** text:

1. Sections A.2, D.6, D.8, D.9, D.10, and D.11 have been revised to incorporate the proposed emission units and include other descriptive changes (removal of equipment etc.).
2. Condition D.6.1.5 - PSD Minor Limits [326 IAC 2 2] has been revised for clarification purposes.
3. Condition D.6.1.6 - PSD Minor Limits [326 IAC 2 2] has been added to include PSD Minor limitations for the proposed Finishing Stations (#ZZ1, #ZZ2, #ZZ3, #ZZ4).
4. Condition D.6.2 - Particulate Emission Limitation for Manufacturing Processes [326 IAC 6-3-2] has been added for the proposed Finishing Stations (#ZZ1, #ZZ2, #ZZ3, #ZZ4).
5. Conditions 6.4 - Testing Requirements, D.6.5 - Emission Controls Operation, D.6.8 - Baghouse Parametric Monitoring, and D.6.9 - Record Keeping Requirements have been added to include the requirements applicable to the proposed Finishing Stations (#ZZ1, #ZZ2, #ZZ3, #ZZ4).
6. Conditions D.6.5 - Emission Controls Operation [326 IAC 2-7-6(6)], D.6.8 - Baghouse Parametric Monitoring [326 IAC 2-7-5(1)] [326 IAC 2-7-5(1)] [40 CFR 64], D.6.9 - Record Keeping Requirements, and D.6.10 - Reporting Requirements have been revised to include these requirements for the proposed Finishing Stations (#ZZ1, #ZZ2, #ZZ3, #ZZ4).
7. The metal, sand throughput and the emission rates (PSD Minor limits) for the cupola melt furnace, and the Herman 2 and Herman 3 lines have been revised in Conditions D.2.1 and D.3.1 to address the re-allocation projects. The Quarterly Report forms have been updated accordingly.
8. Section D.8 has been updated to make descriptive changes and add the proposed Sand Transporter #7.
9. Section D.12 has been added to incorporate the emissions limitations, compliance determination, compliance monitoring, record keeping and reporting requirements for the proposed Phenolic Urethane Core Making Line #12.
10. Quarterly Report forms have been added for recordkeeping requirements for the proposed emissions units.
11. Existing report forms have been revised to include the units of measurements.
A.2 Emission Units and Pollution Control Equipment Summary

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

(1) ....

SECTION D.5

... (b) One (1) vibratory shaker, permitted in 2011, identified as VB1, permitted in 2011, with a nominal capacity of 48.5 tons per hour, with particulate emissions captured and controlled by Baghouse #2, exhausting through Stack G H.

SECTION D.6

... (9) Grinders and Finishing Stations

(a) ...

(e) Two (2) MAUS automatic grinders, identified as MAUS Grinders #1 and #2, approved in 2017 for construction, each with a nominal throughput of 3.0 tons of iron casting per hour, with particulate emissions captured and controlled by a shared box type fabric filter, exhausting internally.

(f) Four (4) manual casting finishing stations, identified as Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, approved in 2018 for construction, each with a maximum capacity of 1.0 ton per hour, using a common baghouse ZZ for control, and exhausting internally.

SECTION D.8

(15) Phenolic Urethane Core Making Line #4

One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.0 tons of sand per hour:

(1) One (1) South (S) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(2) One (1) East (E) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.

(23) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

(4) One (1) enclosed Pneumatic Sand Transporter #7, approved in 2018 for construction, for transferring sand from the East (E) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

[Note: The emissions for Pneumatic Sand Transporter #7 are included within the emissions for the Core Sand Handling Process]
(35) One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(46) One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:

The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.

...

(c) ...

(2) One (1) Phenolic Urethane Core Machine #25, constructed in 1993, approved in 2018 for replacement, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

(22) SECTION D.12

Phenolic Urethane Core Making Line #12 One (1) Phenolic Urethane Core Making Line #12, with a nominal sand throughput of 7.5 tons of sand per hour.

The Phenolic Urethane Core Making Line #12 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.5 tons of sand per hour:

(1) One (1) Phenolic Urethane Core Sand Hopper #12, approved in 2018 for construction:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(2) One (1) natural gas fired Phenolic Urethane Sand Heater #12, approved in 2018 for construction, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The natural gas emissions from the Phenolic Urethane Sand Heater #12 are not controlled.

The sand handling (non-natural gas) particulate emissions from the Phenolic Urethane Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(3) One (1) Weigh Hopper #12, approved in 2018 for construction, with a nominal throughput capacity of 7.5 tons of sand per hour.

The particulate emissions from the Phenolic Urethane Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.
(b) One (1) Phenolic Urethane Core Sand Mixer #12, approved in 2018 for construction, with a nominal throughput of 7.5 tons of core sand per hour and 0.10 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #12 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #35, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #35 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #35.

(2) One (1) Phenolic Urethane Core Machine #36, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #36 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #36.

(3) One (1) Phenolic Urethane Core Machine #37, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #37 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #37.

The natural gas fired Core Oven #12 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

Emissions from the natural gas fired Core Oven #12 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

SUMMARY OF COMMON CONTROL

Wet Scrubber A
– Cupola Melt Furnace

...
– Phenolic Urethane Core Sand Hopper #8,
– Phenolic Urethane Sand Heater #5, and
– Phenolic Urethane Sand Heater #8.

SUMMARY OF COMMON EQUIPMENT

... 

**Pneumatic Sand Transporter #7 is common to:**
– East (E) Sand Silo,
– Phenolic Urethane Core Making Line #4,

... 

**The East (E) Sand Silo is common to:**
– Pneumatic Sand Transporter #7,
– Phenolic Urethane Core Making Lines #4

The natural gas fired Core Oven #4 is common to:
– Phenolic Urethane Core Machines #4 and #5.

**The natural gas fired Core Oven #12 is common to:**
– Phenolic Urethane Core Machines #35, #36 and #37.

D.2.1 PSD Minor Limits [326 IAC 2-2] 

<table>
<thead>
<tr>
<th>Metal Melted Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The amount of metal melted in the Cupola Melt Furnace shall be limited to 487,949 152,078 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.</td>
</tr>
</tbody>
</table>

Cupola Melt Furnace

... 

(f) The VOC emissions from the Cupola Melt Furnace shall be limited to 0.009 0.07 pounds per ton of metal.

D.3.1 PSD Minor Limits [326 IAC 2-2] 

<table>
<thead>
<tr>
<th>Sand Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The combined amount of core and mold sand handled for the:</td>
</tr>
<tr>
<td>(1) Herman 2 Sand Handling, and</td>
</tr>
<tr>
<td>(2) Herman 3 Sand Handling</td>
</tr>
<tr>
<td>shall be limited to 1,127,516 912,470 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.</td>
</tr>
</tbody>
</table>

(b) Herman 2 Pouring (V-19) 

(1) The PM emissions from the Herman 2 Pouring shall be limited to 0.448 0.18 pounds per ton of metal.

(2) The PM₁₀ emissions from the Herman 2 Pouring shall be limited to 0.052 0.19 pounds per ton of metal.

(3) The VOC emissions from the Herman 2 Pouring shall be limited to 0.163 0.44
... pounds per ton of metal.

(c) Herman 2 Castings Cooling (V-8 and V-9)

1. The PM emissions from the Herman 2 Castings Cooling shall be limited to 0.288 pounds per ton of metal.

2. The PM10 emissions from the Herman 2 Castings Cooling shall be limited to 0.196 pounds per ton of metal.

3. The VOC emissions from the Herman 2 Castings Cooling shall be limited to 0.097 pounds per ton of metal.

(d) Herman 2 Shakeout (Stack B)

1. The PM emissions from the Herman 2 Shakeout shall be limited to 0.034 pounds per ton of metal and sand.

2. The PM10 emissions from the Herman 2 Shakeout shall be limited to 0.058 pounds per ton of metal and sand.

3. The VOC emissions from the Herman 2 Shakeout shall be limited to 0.115 pounds per ton of metal and sand.

(e) Herman 2 Sand Handling (Stack F and Stack Y)

1. The PM emissions from the Herman 2 Sand Handling shall be limited to 0.034 pounds per ton of metal and sand.

2. The PM10 emissions from the Herman 2 Sand Handling shall be limited to 0.058 pounds per ton of metal and sand.

3. The VOC emissions from the Herman 2 Sand Handling shall be limited to 0.115 pounds per ton of metal and sand.

SECTION D.5 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]

(6) Inclined Shakeout and Sort System (servicing Herman 2 and Herman 3)

(b) One (1) vibratory shaker, permitted in 2011, identified as VB1, permitted in 2011, with a nominal capacity of 48.5 tons per hour, with particulate emissions captured and controlled by Baghouse #2 #3, exhausting through Stack G H.

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

D.5.1 PSD Minor Limits [326 IAC 2-2]

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

...
(c) Vibratory Shaker VB1 (Stack H)

**Metal Throughput**

1. The amount of metal throughput to the vibratory shaker VB1 shall **not exceed** be limited to 142,000 **30,000** tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month.

**PM**

2. The PM emissions after control from the vibratory shaker VB1 stack (Stack H) shall **not exceed** be limited to 0.941 pound be limited to 0.188 pounds per ton of ironmetal.

3. The uncaptured and uncontrolled PM emissions from the vibratory shaker VB1 shall not exceed 0.064 pound per ton of metal.

4. The PM10 emissions after control from the vibratory shaker VB1 stack (Stack H) shall **not exceed** be limited to 0.659 pound be limited to 0.154 pounds per ton of metal.

5. The uncaptured and uncontrolled PM10 emissions from the vibratory shaker VB1 shall not exceed 0.045 pound per ton of metal.

Compliance with the limits listed in (c), (d) & (e) above, combined with and the limits specified in Condition D.6.1.2, shall ensure that will restrict the potential to emit from the 2011 modification (permitted in SSM No. 085-29402-00003, issued on January 20, 2011) to add the Vibratory Shaker, and Hose Blast system to are less than twenty-five (25) tons of PM per year, and less than fifteen (15) tons of PM10 per twelve (12) consecutive month period, respectively, and shall render 326 IAC 2-2 (PSD) not applicable to the 2011 modification. Therefore the requirements of 326 IAC 2-2 (PSD) are not applicable to the 2011 modification to add the Vibratory Shaker, and Hose Blast system, including the unrestricted PTE of the ‘fugitive’ emissions from these emission units.

**D.5.2 Particulate Emission Limitation [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
<th>Equation Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inclined Shakeout and Sort System (Baghouse #2, Stack G)</td>
<td>48.5</td>
<td>44.3</td>
<td>(b)</td>
</tr>
<tr>
<td>Vibratory Shaker VB1 (Baghouse #23, Stack GH)</td>
<td>48.5</td>
<td>44.3</td>
<td>(b)</td>
</tr>
<tr>
<td>Waste Sand Handling, Screening and Transport System (Baghouse #9, Stack R)</td>
<td>20</td>
<td>30.5</td>
<td>(a)</td>
</tr>
</tbody>
</table>

...  

**D.5.4 Emission Controls Operation [326 IAC 2-7-6(6)]**

(a) Baghouse #2 – Inclined Shakeout and Sort System and Vibratory Shaker
The Baghouse #2 for particulate emissions control shall be in operation and control emissions from the Inclined Shakeout and Sort system and/or Vibratory Shaker at all times when the Inclined Shakeout and Sorting system and/or Vibratory Shaker is in operation.

(c) Baghouse #3 - Vibratory Shaker VB1
The Baghouse #3 for particulate emissions control shall be in operation and control emissions from the vibratory shaker VB1 at all times when the vibratory...
shaker VB1 is in operation.

\[(c)\] In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.5.5 Testing Requirements [326 IAC 2-7-6(1), (6)]

(a) In order to demonstrate the compliance status with Conditions D.5.1(c)(1) and D.5.2, the Permittee shall perform PM testing on the vibratory shaker VB1.

(b) In order to demonstrate the compliance status with Condition D.5.1(d)(c)(2), the Permittee shall perform emissions testing to determine the PM10 emissions for the vibratory shaker VB1. PM10 includes filterable and condensable PM.

D.5.7 Visible Emissions Notations [40 CFR 64]

(a) Visible emission notations of the:

1. Baghouse #2 exhaust stack (Stack G), and
2. Baghouse #9 exhaust stack (Stack R), and
3. Baghouse #3 exhaust stack (Stack H),

shall be performed once per day during normal daylight operations when exhausting to the atmosphere and when the associated processes are in operation. A trained employee shall record whether emissions are normal or abnormal.

D.5.9 Record Keeping Requirements

(a) To document the compliance status with Condition D.5.1 – PSD Minor Limits, the Permittee shall maintain records of the amount of sand throughput to the Waste Sand Handling, Screening and Transport system and the amount of metal throughput to the vibratory shaker VB1.

(b) To document the compliance status with Condition D.5.7 – Visible Emission Notations, the Permittee shall maintain daily records of visible emission notations of the baghouse #2, baghouse #3, and baghouse #9 stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken and the reason for the lack of visible emission notation (e.g. the process did not operate that day).

D.5.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.5.1(b)(1) and D.5.1(e)(c)(1), shall be submitted not later than thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee’s obligations with regard to the reporting required by this condition.
Facility Description [326 IAC 2-7-5(14)]

(9) Grinders and Finishing Stations

(f) Four (4) manual casting finishing stations, identified as Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, approved in 2018 for construction, each with a maximum capacity of 1.0 ton per hour, using a common baghouse ZZ for control, and exhausting internally.

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

D.6.1.6 PSD Minor Limits [326 IAC 2-2]

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

(a) Throughput
The total throughput of finished metal processed at Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 17,500 tons of metal per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM
(1) The PM emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 1.68 pounds per ton of finished metal.

(2) The uncaptured and uncontrolled PM emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 1.49 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(c) PM10
(1) The PM10 emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.42 pound per ton of finished metal.

(2) The uncaptured and uncontrolled PM10 emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.15 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.

(d) PM2.5
(1) The PM2.5 emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.93 pound per ton of finished metal.

(2) The uncaptured and uncontrolled PM2.5 emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.15 ton per twelve (12) consecutive month period, with compliance determined at the end of each month.

(e) Lead
(1) The lead (Pb) emissions after control from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.04 pound per ton of finished metal.

(2) The uncaptured and uncontrolled Pb emissions from Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 shall not exceed 0.01 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.
Compliance with these limits, combined with the limited emissions from the following:

(i) Phenolic Urethane Core Sand Hopper #12;
(ii) Phenolic Urethane Weigh Hopper #12; and
(iii) Sand Heater #12 (non-natural gas) particulate emissions, and

the potential to emit of the following:

(iii) core oven #12,

shall limit the PM, PM10, PM2.5 and Pb from the 2018 Modification (Section D.12) to less than twenty five (25) tons, fifteen (15) tons, ten (10) tons, and 0.6 tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2018 Modification (permitted in Significant Source Modification No. 085-39391-00003).

D.6.2 Particulate Emission Limitation for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
<tr>
<td>Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4</td>
<td>1.0, each</td>
<td>4.10, each</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 \times P^{0.67} \]

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

D.6.4 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) ...

(e) Not later than 180 days after the startup of the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, the Permittee shall perform PM, PM10, PM2.5 and Pb testing for Baghouse ZZ, utilizing methods approved by the Commissioner.

This test shall be repeated at least once every 5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).

PM10 and PM2.5 includes filterable and condensable PM.

(ef) Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C – Performance Testing contains the Permittee’s obligations with regard to the testing required by this condition.

D.6.5 Emission Controls Operation [326 IAC 2-7-6(6)]

(g) Baghouse ZZ

The Baghouse #ZZ for particulate emissions control shall be in operation and
control emissions from the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, at all times that any one of these finishing stations is in operation.

(gh) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.6.8 Baghouse Parametric Monitoring [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)] [40 CFR 64]

(h) Baghouse ZZ
The Permittee shall record the pressure drop across Baghouse ZZ, at least once per day, when any of the associated Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4, is in operation. When for any one reading, the pressure drop across Baghouse ZZ is outside the normal range, the Permittee shall take reasonable response. The normal range for Baghouse ZZ is a pressure drop range between 0.5 and 7.5 inches of water unless a different upper-bound or lower-bound value for this range is determined during the most recent valid stack test.

(bg) A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit. Section C – Response to Excursions or Exceedances contains the Permittee's obligations with regard to responding to the reasonable response steps required by this condition.

(ij) The instruments used for determining the pressure shall comply with Section C – Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated or replaced at least once every six (6) months.

D.6.9 Record Keeping Requirements

(h) To document the compliance status with Condition D.6.7– Baghouse Parametric Monitoring, the Permittee shall maintain the daily records of the pressure drop across baghouse #3, baghouse #6, baghouse #12, baghouse #15, baghouse #16, the blow-off chamber fabric filter control device, and the MAUS automatic grinders #1 and #2 fabric filter control device and Baghouse ZZ. The Permittee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading, (e.g. the process did not operate that day).

(i) To document the compliance status with Condition D.6.1.6(a) – PSD Minor Limits, the Permittee shall maintain records of the amount of total throughput of finished metal processed at Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4 and the calculate PM, PM10 and PM2.5 emissions.

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

D.6.10 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.6.1(a) – PSD Minor Limits, Condition D.6.1(e) - PSD Minor Limits, Condition D.6.1.2(a) – PSD Minor Limits, Condition D.6.1.3(a) – PSD Minor Limits, Condition D.6.1.4(a) - PSD Minor Limits, and Condition D.6.1.5(a) - PSD Minor Limits, and Condition D.6.1.6(a) – PSD Minor Limits, shall be submitted within thirty (30) days following the end of each calendar quarter. The report submitted by the Permittee does require a certification that meets the requirements of
326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permittee's obligations with regard to the reporting required by this condition.

SECTION D.8 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(14)]

(15) Phenolic Urethane Core Making Line #4
One (1) Phenolic Urethane Core Making Line #4, with a nominal sand throughput of 7.0 tons of sand per hour. The Phenolic Urethane Core Making Line #4 consists of the following emission units:

(a) (2) One (1) East (E) Sand Silo, constructed prior to 1977, with an integral bin vent to control particulate emissions when loading.
(23) One (1) enclosed Pneumatic Sand Transporter #2, constructed in 1996, for transferring sand from the South (S) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.
(4) One (1) enclosed Pneumatic Sand Transporter #7, approved in 2018 for construction, for transferring sand from the East (E) Sand Silo to the Phenolic Urethane Core Sand Hopper #4.

[Note: The emissions for Pneumatic Sand Transporter #7 are included within the emissions for the Core Sand Handling Process]
(35) One (1) Phenolic Urethane Core Sand Hopper #4, constructed in 1986.

The particulate emissions from the Phenolic Urethane Core Sand Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(46) One (1) electric Phenolic Urethane Sand Heater #4, constructed in 1986:
The particulate emissions from the Phenolic Urethane Sand Heater #4 are captured and controlled by Baghouse U, exhausting through Stack U.

(7) One (1) Phenolic Urethane Core Sand Weigh Hopper #4, constructed in 1986.

(c) ...

(2) One (1) Phenolic Urethane Core Machine #25, constructed in 1993, approved in 2018 for replacement, that contains two (2) core boxes that cannot be operated simultaneously due to having only one blow head for blowing sand into the box, and its corresponding Core Wash Dip Tank #25, natural gas fired Core Oven #8, and natural gas fired Core Oven #25, each with a nominal throughput of 7.0 tons of sand per hour, 0.541 pounds of VOC (from resin) per ton of sand, and 2.75 pounds of catalyst per ton of sand.

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)
SECTION D.12  EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(20) Phenolic Urethane Core Making Line #12

One (1) Phenolic Urethane Core Making Line #12, with a nominal sand throughput of 7.5 tons of sand per hour. The Phenolic Urethane Core Making Line #12 consists of the following emission units:

(a) One (1) Core Sand Handling Process, with a nominal sand throughput of 7.5 tons of sand per hour:

(1) One (1) Phenolic Urethane Core Sand Hopper #12, approved in 2018 for construction:

The particulate emissions from the Phenolic Urethane Core Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(2) One (1) natural gas fired Phenolic Urethane Sand Heater #12, approved in 2018 for construction, with a maximum heat input capacity of 192,000 British thermal units (Btu) per hour.

The natural gas emissions from the Phenolic Urethane Sand Heater #12 are not controlled.

The sand handling (non-natural gas) particulate emissions from the Phenolic Urethane Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(3) One (1) Weigh Hopper #12, approved in 2018 for construction, with a nominal throughput capacity of 7.5 tons of sand per hour.

The particulate emissions from the Phenolic Urethane Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

(b) One (1) Phenolic Urethane Core Sand Mixer #12, approved in 2018 for construction, with a nominal throughput of 7.5 tons of core sand per hour and 0.10 pounds of VOC (from resin) per ton of sand.

Emissions from the Phenolic Urethane Core Sand Mixer #12 are uncontrolled.

(c) Three (3) Core Machines, three (3) Core Wash Dip Tanks, and one (1) natural gas fired Core Oven

(1) One (1) Phenolic Urethane Core Machine #35, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #35 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #35.

(2) One (1) Phenolic Urethane Core Machine #36, approved in 2018...
for construction, and its corresponding Core Wash Dip Tank #36 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #36.

(3) One (1) Phenolic Urethane Core Machine #37, approved in 2018 for construction, and its corresponding Core Wash Dip Tank #37 and natural gas fired Core Oven #12, each with a nominal throughput of 7.5 tons of sand per hour, 0.40 pounds of VOC (from resin) per ton of sand, and 2.25 pounds of catalyst per ton of sand.

Non-VOC Core Wash is used in the Core Wash Dip Tank #37.

The natural gas fired Core Oven #12 has a maximum heat input capacity of 2.4 million British thermal units (Btu) per hour.

Emissions from the natural gas fired Core Oven #12 are uncontrolled.

The catalyst used is Dimethylisopropylamine (DMIPA) or an equivalent, non-HAP containing catalyst.

(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.12.1 PSD Minor Limit - PM, PM10 and PM2.5 [326 IAC 2-2]

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

(a) Sand Throughput
   The total throughput of sand input at Phenolic Urethane Core Making Line #12 shall not exceed 10,100 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM
   (1) The PM emissions after control from the units of the Phenolic Urethane Core Making Line #12 exhausting to Stack T shall not exceed 0.33 pound per ton of sand.

   (2) The uncaptured and uncontrolled PM emissions from Phenolic Urethane Core Making Line #12 shall not exceed 0.036 pound per ton of sand.

(b) PM10
   (1) The PM10 emissions after control from the units of the Phenolic Urethane Core Making Line #12 exhausting to Stack T shall not exceed 0.065 pound per ton of sand.

   (2) The uncaptured and uncontrolled PM10 emissions from Phenolic Urethane Core Making Line #12 shall not exceed 0.005 pound per ton of sand.

(c) PM2.5
   (1) The PM2.5 emissions after control from the units of the Phenolic Urethane Core Making Line #12 exhausting to Stack T shall not exceed 0.065 pound
per ton of sand.

(2) The uncaptured and uncontrolled PM2.5 from Phenolic Urethane Core Making Line #12 shall not exceed 0.005 pound per ton of sand.

The following are the units of the Phenolic Urethane Core Making Line #12 that are controlled and exhausting to Stack T:

(1) Phenolic Urethane Core Sand Hopper #12;
(2) Phenolic Urethane Weigh Hopper #12; and
(3) Sand Heater #12 (non-natural gas) particulate emissions

Compliance with these limits, combined with the limited PM, PM10 and PM2.5 emissions from the Finishing Stations #ZZ1, #ZZ2, #ZZ3, and #ZZ4 (Section D.6) shall ensure that the emission increases of PM, PM10, and PM2.5 from the 2018 Modification remain below twenty five (25) tons, fifteen (15) tons, ten (10) tons, and forty (40) tons per twelve (12) consecutive month period, respectively, and render 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable to the 2018 Modification (permitted in Significant Source Modification No. 085-39391-00003).

D.12.2 Volatile Organic Compounds Limitations [326 IAC 2-2][326 IAC 8-1-6]

In order to render the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration (PSD) and 326 IAC 8-1-6 (BACT) not applicable, the Permittee shall comply with the following:

(a) Sand Throughput Limit
The amount of sand throughput to the Phenolic Urethane Core Making Line #12 shall not exceed 10,100 tons of sand per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) Mixer
The VOC emissions from the Phenolic Urethane Core Sand Mixer #12 shall not exceed 0.100 pounds per ton of sand.

(c) Core Machines

(1) The VOC emissions of the catalyst of the 3 core machines shall not exceed 2.25 pounds per ton of sand.
(2) There are no VOC emissions from the core wash.
(3) The VOC emissions from the resins of the 3 core machines shall not exceed 0.4 pounds per ton of sand.
(4) The VOC emissions from the cleaner of the 3 core machines shall not exceed 0.144 pounds per ton of sand.
(5) The VOC emissions from the release agent of the 3 core machines shall not exceed 0.105 pounds per ton of sand.

The three (3) core Machines are the following:

(1) One (1) Phenolic Urethane Core Machine #35,
(2) One (1) Phenolic Urethane Core Machine #36, and
(3) One (1) Phenolic Urethane Core Machine #37.

Compliance with these limits shall ensure that the emission increases of VOC from the 2018 Modification remain below 25 tons per twelve (12) consecutive month period,
D.12.3 Particulate Emission Limitation [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2 Particulate Emission Limitations for Manufacturing Processes, the particulate matter (PM) emissions from each process shall not exceed the pounds per hour limitations specified in the table below:

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phenolic Urethane Core Sand Hopper #12</td>
<td>7.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Phenolic Urethane Weigh Hopper #12</td>
<td>7.5</td>
<td>15.8</td>
</tr>
<tr>
<td>Sand Heater #12 (non-natural gas) particulate emissions</td>
<td>7.5</td>
<td>15.8</td>
</tr>
</tbody>
</table>

The pound per hour limitations was calculated with the following equations:

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

\[ E = 4.10 P^{0.67} \]

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

D.12.4 Preventive Maintenance Plan [326 IAC 2-7-5(12)]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligations with regard to the preventive maintenance plan required by this condition.

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

D.12.5 Particulate Matter Control

(a) In order to comply with Conditions D.12.1 and D.12.3, the Baghouse T for particulate control shall be in operation at all times that any of the following units in Phenolic Urethane Core Making Line #12 is in operation.

(1) Phenolic Urethane Core Sand Hopper #12;
(2) Phenolic Urethane Weigh Hopper #12; and
(3) Sand Heater #12 (non-natural gas) particulate emissions.

(b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

D.12.6 Testing Requirements [326 IAC 2-7-6(1), (6)] [326 IAC 2-1.1-11]

(a) In order to demonstrate compliance with Conditions D.12.1 and D.12.3, not later than 180 days after the startup of Phenolic Urethane Core Making Line #12, the Permittee shall perform PM, PM10, and PM2.5 testing at Baghouse T (exhausting to Stack T), utilizing methods approved by the Commissioner.

This test shall be repeated at least once every 5 years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures).
PM_{10} and PM_{2.5} includes filterable and condensable PM.

(b) Section C – Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.12.7 Broken or Failed Bag Detection [326 IAC 2-7-6(1)] [326 IAC 2-7-5(1)]

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

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

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.12.8 Parametric Monitoring

The Permittee shall record the pressure drop across Baghouse T at least once per day when any of the associated emission units is in operation. When, for any one reading, the pressure drop across a baghouse is outside the normal range, the Permittee shall take a reasonable response. The normal range for this unit is a pressure drop between 1.0 and 9.0 inches of water unless a different upper-bound or lower-bound value for this range is determined during the latest stack test. Section C - Response to Excursions and Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps shall be considered a deviation from this permit.

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

D.12.9 Broken or Failed Bag Detection

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

(b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the line. Operations may continue only if the event qualifies as an emergency and the Permittee satisfies the requirements of the emergency provisions of this permit (Section B - Emergency Provisions).
Bag failure can be indicated by a significant drop in the baghouse’s pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

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

D.12.10 Record Keeping Requirements

(a) To document the compliance status with Conditions 12.1 and D.12.2, the Permitee shall maintain records of the amount of sand throughput at Phenolic Urethane Core Making Line #12 and the calculated PM, PM10 and PM2.5 emissions.

(b) To document the compliance status with Condition D.12.2, the Permitee shall maintain records of the VOC content and usage amounts Phenolic Urethane Core Making Line #12 and the calculated VOC emissions.

(c) To document the compliance status with Condition D.12.8, the Permitee shall maintain daily records of pressure drop across Baghouse T. The Permitee shall include in its daily record when a pressure drop reading is not taken and the reason for the lack of a pressure drop reading (e.g. the process did not operate that day).

(d) Section C - General Record Keeping Requirements contains the Permitee’s obligations with regard to the record keeping required by this condition.

D.12.11 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.12.1 and D.12.2, shall be submitted within thirty (30) days following the end of each calendar quarter. The report submitted by the Permitee does require a certification that meets the requirements of 326 IAC 2-7-6(1) by a “responsible official” as defined by 326 IAC 2-7-1(35). Section C - General Reporting Requirements contains the Permitee's obligations with regard to the reporting required by this condition.

SECTION D.4213 FACILITY OPERATION CONDITIONS

D.4213.1 Volatile Organic Compounds (VOC) [326 IAC 8-3-2]

(a) Pursuant to 326 IAC 8-3-2(a), the Permitee shall ensure the following control equipment and operating requirements are met for the degreasing operations:

D.4213.2 Particulate Emission Limitation [326 IAC 6-3-2]

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

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 E. Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T085-30768-00003
Facilities: Cupola Charge Handling
Parameters: Amount of Metal Charged
Limits: 199,194 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.1)
Facilities: Cupola Melt Furnace
Parameters: Amount of Metal Melted
Limits: 187,919 \textbf{152,078} tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.2)

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Facilities: Herman 2 Sand Handling - Klein Transport
Parameters: Amount of Core and Mold Sand Handled
Limits: 106,000 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.3)

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Facilities: Herman 2 and Herman 3 Sand Handling
Parameters: Amount of Core and Mold Sand Handled
Limits: 1,427,546 **912,470** tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Sections D.3 and D.4)

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Facilities: Herman 3 Mold Line
Parameters: Amount of Metal Throughput
Limits: 90,578 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.4)

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Facilities: Phenolic Urethane Core Making Line #4
Parameters: Amount of Sand Throughput
Limits: 12,910 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.9)

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Parameters: Amount of Sand Throughput
Limits: 543,470 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.4)

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Facilities: Waste Sand Handling, Screening and Transport System
Parameters: Amount of Sand Throughput
Limits: 112,752 tons of sand per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.5)

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Facilities: Vibratory Shaker VB1
Parameters: Amount of Metal Throughput
Limits: 142,000 30,000 tons of metal per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.5)

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</table>
Facilities: Shot Blast Machines (SB-1 through SB-9)  
Parameters: Amount of Finished Castings  
Limits: 112,752 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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Facilities: Shot Blast Machine (SB-9)  
Parameters: Amount of Finished Castings  
Limits: 60,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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Facilities: Hose Blast System for Shot Blast Machine SB-8  
Parameters: Amount of Finished Castings  
Limits: 16,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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</table>
### Facilities: Robotic Grinders ABB and FANUC
- **Parameters:** Amount of Finished Castings
- **Limits:** 15,500 tons of finished castings per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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### Facilities: SB 10 Blow-Off Chamber
- **Parameters:** Casting Throughput
- **Limits:** 20,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

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### Facilities: MAUS Automatic Grinders #1 and #2
- **Parameters:** Casting Throughput
- **Limits:** 21,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)
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Facilities: Phenolic Urethane Core Making Line #9 (Sand Mixer #9)
Parameters: Amount of Input Resin
Limits: 295,000 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and compliance determined at the end of each month. (Section D.87)

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Facilities: Phenolic Urethane Core Making Line #9 (Sand Mixer #9)
Parameters: Amount of Input Catalysts
Limits: 32,935 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and compliance determined at the end of each month. (Section D.87)

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Facilities: Phenolic Urethane Core Making Line #1
Parameters: Amount of Sand Throughput
Limits: 17,922 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.98)

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Facilities: Phenolic Urethane Core Making Line #2
Parameters: Amount of Sand Throughput
Limits: 4,656 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.98)

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Facilities: Phenolic Urethane Core Making Line #3
Parameters: Amount of Sand Throughput
Limits: 23,200 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.98)

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</table>
Facilities: Phenolic Urethane Core Making Line #4  
Parameters: Amount of Sand Throughput  
Limits: 12,910 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.98)

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<th>QUARTER:</th>
<th>YEAR:</th>
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<tbody>
<tr>
<td>Month</td>
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Facilities: Phenolic Urethane Core Making Line #5  
Parameters: Amount of Sand Throughput  
Limits: 2,383 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.98)

<table>
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<tbody>
<tr>
<td>Month</td>
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</table>

Facilities: Phenolic Urethane Core Making Line #8  
Parameters: Amount of Sand Throughput  
Limits: 6,350 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.98)

<table>
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<th>YEAR:</th>
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<tbody>
<tr>
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</tbody>
</table>
Facilities: Phenolic Urethane Core Making Lines #1 through #5, and #8
Parameters: Amount of Core Wash Used
Limits: 117,260 gallons per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core wash shall not exceed 0.12 pounds per gallon. Compliance determined at the end of each month. (Section D.8 D.9)

<table>
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<tr>
<th>QUARTER</th>
<th>YEAR</th>
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<tbody>
<tr>
<td>Month</td>
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Facilities: Phenolic Urethane Core Making Lines #1 through #5, and #8
Parameters: Amount of Core Machines Cleaner Used
Limits: 1188 gallons per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core machines cleaner shall not exceed 8.17 pounds per gallon. Compliance determined at the end of each month. (Section D.9 D.8)

<table>
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<th>YEAR</th>
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<tbody>
<tr>
<td>Month</td>
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</tbody>
</table>

Facilities: Phenolic Urethane Core Making Lines #1 through #5, and #8
Parameters: Amount of Core Release Agent Used
Limits: 1150 gallons per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core release agent shall not exceed 6.15 pounds per gallon. Compliance determined at the end of each month. (Section D.9 D.8)

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>YEAR</th>
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<tbody>
<tr>
<td>Month</td>
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</tbody>
</table>
### Parameters: Amount of Resin Used

- **Facilities:** Large Core Production Cell (ID LCC)
- **Limits:** 299,399.3 pounds per twelve (12) consecutive month period, basis, and VOC content of the resin shall not exceed 0.02904 pounds of VOC per pound of resin. Compliance determined at the end of each month. (Section D.124)

<table>
<thead>
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</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
<th>12 Month Total (pounds)</th>
</tr>
</thead>
</table>

### Parameters: Amount of Core Wash Used

- **Facilities:** Large Core Production Cell (ID LCC)
- **Limits:** 245,504.7 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the core wash shall not exceed 0.02 pounds of VOC per pound of core wash. Compliance determined at the end of each month. (Section D.131)

<table>
<thead>
<tr>
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<th>YEAR</th>
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</table>

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
<th>12 Month Total (pounds)</th>
</tr>
</thead>
</table>

### Parameters: Amount of Release Agent Used

- **Facilities:** Large Core Production Cell (ID LCC)
- **Limits:** 1,397 pounds per twelve (12) consecutive month period, rolled on a monthly basis, and VOC content of the release agent shall not exceed 0.9 pounds of VOC per pound of release agent. Compliance determined at the end of each month. (Section D.11)

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (pounds)</th>
<th>Previous 11 Months (pounds)</th>
<th>12 Month Total (pounds)</th>
</tr>
</thead>
</table>
### Facilities: Large Core Production Cell (ID LCC)

#### Parameters:
Amount of Core Box Cleaner Used

#### Limits:
1,725 pounds per twelve consecutive month period, rolled on a monthly basis, and VOC content of the core box cleaner shall not exceed 1.0 pounds of VOC per pound of core box cleaner. Compliance determined at the end of each month. (Section D.124)

<table>
<thead>
<tr>
<th>QUARTER:</th>
<th>YEAR:</th>
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</thead>
<tbody>
<tr>
<td>Month</td>
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</tbody>
</table>

### Facilities: Large Core Production Cell (ID LCC)

#### Parameters:
Amount of Sand Throughput

#### Limits:
12,005 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.112)

<table>
<thead>
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<tbody>
<tr>
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</tbody>
</table>

### Facilities: Core Making Line #9

#### Parameters:
Amount of Sand Throughput
Limits: 12,000 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.7.12)

**QUARTER: YEAR: ____**

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (tons)</th>
<th>Previous 11 Months (tons)</th>
<th>12 Month Total (tons)</th>
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</tbody>
</table>

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

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Core Making Line #12
Parameters: Total Amount of Sand Throughput
Limits: 10,100 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.12)

**QUARTER: YEAR: ____**

<table>
<thead>
<tr>
<th>Month</th>
<th>This Month (tons)</th>
<th>Previous 11 Months (tons)</th>
<th>12 Month Total (tons)</th>
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</tbody>
</table>

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.

Deviation has been reported on: ______________

Submitted By: ____________________________________

Title/Position: __________________________________
INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH

Part 70 Quarterly Report

Source Name: Dalton Corporation, Warsaw Manufacturing Facility
Source Address: 1900 Jefferson Street, Warsaw, Indiana 46580
Part 70 Permit No.: T 085-30768-00003
Facilities: Finishing Stations #ZZ1, #ZZ2, #ZZ3, #ZZ4
Parameters: Total Amount of Finished Metal
Limits: 17,500 tons per twelve (12) consecutive month period, rolled on a monthly basis, with compliance determined at the end of each month. (Section D.6)

<table>
<thead>
<tr>
<th>QUARTER</th>
<th>YEAR</th>
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</thead>
<tbody>
<tr>
<td>Month</td>
<td>This Month (tons)</td>
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</tbody>
</table>

☐ No deviation occurred in this quarter.

☐ Deviations occurred in this quarter.
Deviation has been reported on: ________________

Submitted By: ________________________________
Title/Position: _______________________________
Signature: ________________________________
Date: ________________________________
Phone: ________________________________
Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on December 14, 2017. Additional information was received between January 2, 2018 and April 16, 2018.

The construction of this proposed modification shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 085-39391-00003. The operation of this proposed modification shall be subject to the conditions of the attached Significant Permit Modification.

The staff recommends to the Commissioner that the Part 70 Significant Source Modification and Significant Permit Modification be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Rithika Reddy at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-9694 or toll free at 1-800-451-6027, extension 4-9694.

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

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Air Permits page on the Internet at: http://www.in.gov/idem/airquality/2356.htm; and the Citizens’ Guide to IDEM on the Internet at: http://www.in.gov/idem/6900.htm.
## Appendix A: Emissions Calculations

Source Name: Dalton Corporation - Warsaw Manufacturing Facility

Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580

Significant Source Modification No.: 085-39391-00003

Significant Permit Modification No.: 085-39431-0003

Permit Reviewer: Rithika Reddy

### Uncontrolled Potential To Emit (ton/yr)

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<th>PM2.5</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>Pb</th>
<th>Total HAPs</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Cupola Melt Furnace</td>
<td>2,931.5</td>
<td>2,634.1</td>
<td>2,634.1</td>
<td>265.5</td>
<td>21.2</td>
<td>38.2</td>
<td>30,802.4</td>
<td>233.7</td>
<td>2,931.53</td>
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<tr>
<td>Herman 2 Mold Line</td>
<td>439.9</td>
<td>335.2</td>
<td>335.2</td>
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<td>8.9</td>
<td>960.3</td>
<td>5,334.8</td>
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<tr>
<td>Herman 3 Mold Line</td>
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<td>Inclined Shakeout and Sort System</td>
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<tr>
<td>Vibratory Shaker</td>
<td>879.8</td>
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<td>-</td>
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<tr>
<td>Waste Sand Handling, Screening and</td>
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<td>-</td>
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<tr>
<td>Transport System</td>
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<tr>
<td>Shot Blast Machines</td>
<td>4,877.1</td>
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<td>Robotic Grinders ABB and FANUC</td>
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<td>MAUS Automatic Grinders (2017)</td>
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<td>235.7</td>
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<td>Phenolic Urethane Core Making</td>
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<tr>
<td>Line # 1</td>
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<td>-</td>
<td>133.9</td>
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<td>7.7</td>
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<td>Line # 2</td>
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<td>11.3</td>
<td>11.3</td>
<td>-</td>
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<td>-</td>
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<td>120.3</td>
<td>-</td>
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<td>11.3</td>
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<td>120.3</td>
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<td>Line # 5</td>
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<td>-</td>
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<td>86.0</td>
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<td>-</td>
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<td>Line # 9</td>
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<td>Line #12</td>
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<td>77.7</td>
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<tr>
<td>Core Oven #12, P.U, San Heater #12</td>
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<td>0.09</td>
<td>0.09</td>
<td>0.01</td>
<td>1.14</td>
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<tr>
<td>Finishing Stations #ZZ1 through ZZ4</td>
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<td>-</td>
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<td>- stack</td>
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<tr>
<td>Shell Core Making Process</td>
<td>11.3</td>
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<td>-</td>
<td>-</td>
<td>13.1</td>
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<td>11.26</td>
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<td>Air Set Core Making Process</td>
<td>11.3</td>
<td>11.3</td>
<td>11.3</td>
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<td>98.3</td>
<td>1,31E-05</td>
<td>11.26</td>
<td></td>
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<tr>
<td>Large Core Production Cell</td>
<td>473.0</td>
<td>71.0</td>
<td>71.0</td>
<td>-</td>
<td>-</td>
<td>427.8</td>
<td>-</td>
<td>-</td>
<td>43.36</td>
</tr>
<tr>
<td>Combustion</td>
<td>0.5</td>
<td>1.9</td>
<td>1.9</td>
<td>0.15</td>
<td>25.58</td>
<td>1.4</td>
<td>21.48</td>
<td>0</td>
<td>0.43</td>
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<tr>
<td>Diesel Emergency Generator</td>
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<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>1.32</td>
<td>0.11</td>
<td>0.28</td>
<td>-</td>
<td>0.001</td>
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<tr>
<td>Gasoline Generators</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>0.12</td>
<td>2.22</td>
<td>4.35</td>
<td>1.40</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>20,424.4</strong></td>
<td><strong>5,659.8</strong></td>
<td><strong>5,596.2</strong></td>
<td><strong>283.7</strong></td>
<td><strong>60.4</strong></td>
<td><strong>3,220.4</strong></td>
<td><strong>41,232.5</strong></td>
<td><strong>269.3</strong></td>
<td><strong>3,890.4</strong></td>
</tr>
</tbody>
</table>
## Appendix A: Emissions Calculations

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

### Limited Potential To Emit (ton/yr)

<table>
<thead>
<tr>
<th>Source Name</th>
<th>PM</th>
<th>PM₁₀</th>
<th>PM₂₅</th>
<th>SOₐ</th>
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<td>1.14</td>
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<td>Finishing Stations #ZZ1 through ZZ4 stack</td>
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<td>3.68</td>
<td>8.10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.33</td>
<td>0.33</td>
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### New Emission Units - Uncontrolled (Unlimited) Potential to Emit (tons/year)

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<tr>
<th>Emission Unit</th>
<th>PM (tons/yr)</th>
<th>PM₁₀ (tons/yr)</th>
<th>PM₂.₅ (tons/yr)</th>
<th>SO₂ (tons/yr)</th>
<th>VOC (tons/yr)</th>
<th>CO (tons/yr)</th>
<th>NOₓ (tons/yr)</th>
<th>HAPs (tons/yr)</th>
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<tr>
<td>Phenolic Urethane Core Making Line #12 Stack</td>
<td>117.08</td>
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### ATP - New Emission Units (tons/year)

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<th>PM₁₀</th>
<th>PM₂.₅</th>
<th>SO₂</th>
<th>VOC</th>
<th>CO</th>
<th>NOₓ</th>
<th>Pb</th>
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<tr>
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<td>1.66</td>
<td>0.33</td>
<td>0.33</td>
<td>-</td>
<td>11.95</td>
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<td>0.18</td>
<td>0.03</td>
<td>0.03</td>
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<td>0.06</td>
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<td>3.68</td>
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<td>-</td>
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<td>0.33</td>
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<td><strong>24.85</strong></td>
<td><strong>0.95</strong></td>
<td><strong>1.14</strong></td>
<td><strong>0.33</strong></td>
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### Existing Emission Unit ATPA (tons/year)

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<th>PM₂.₅</th>
<th>SO₂</th>
<th>VOC</th>
<th>CO</th>
<th>NOₓ</th>
<th>Pb</th>
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<td>Baseline Actual Emissions</td>
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### Project Emissions (tons/year)

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<th>PM₂.₅</th>
<th>SO₂</th>
<th>VOC</th>
<th>CO</th>
<th>NOₓ</th>
<th>Pb</th>
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<td><strong>0.95</strong></td>
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Phenolic Urethane Core Making Line #12

New equipment. Mixer #12 with Core Machines 35, 36, & 37.

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<tr>
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<th>Installation Date</th>
<th>Nominal Throughput</th>
<th>Annual Throughput</th>
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<td></td>
<td>7/5/2000</td>
<td>15,000 ton/hr</td>
<td>7.5 ton/hr</td>
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Limited Capacity: proposed level 10,100 ton/yr

### PM - Regulated Pollutants

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<tr>
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<td>17.74</td>
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### Limited Uncaptured and Uncontrolled Emissions

Limited Uncaptured and Uncontrolled Emissions (ton/yr) - TOTAL = Limited Uncaptured and Uncontrolled Emissions + Limited Controlled Emissions - (emission factor (lb/ton) x Limited Capacity (ton/yr)) / 2,000 lbs/ton

Limited Uncaptured and Uncontrolled Emissions (ton/yr) = ((Uncaptured resin - core machines + catalyst + core wash + core box cleaner + release agent emission factor (lb/ton) x Limited Capacity (ton/yr)) / 2,000 lbs/ton

Controlled Emissions (tons/yr) = (Uncaptured Emissions x (Limited Throughput / Maximum Throughput)) x Capture Efficiency x (1 - Control Efficiency)

Controlled Stack Emissions PTE (ton/yr) = [Captured resin - core machines + catalyst + core wash + core box cleaner + release agent emission factor (lb/ton) x Annual Throughput (ton/yr)] / 2,000 lb/ton

Limited Uncaptured and Uncontrolled Emissions - TOTAL = Limited Uncaptured and Uncontrolled Emissions + Limited Controlled Emissions - from stack

226 IAC 6-2-2 Particulate Emission Rate Limitations

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</tr>
</tbody>
</table>

Methodology

Core Sand Handling Process: nominal throughput of 7.5 tons of sand per hour

One (1) South (S) Sand Silo with an integral bin vent to control particulate emissions when loading.

One (1) enclosed Phenolic Sand Transporter #2 for transferring sand from the South (S) Sand Silo to P.U. Core Sand Hopper #12.

One (1) Phenolic Urethane Core Sand Hopper #12. Particulate emissions from the P.U. Sand Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

One (1) 192,000 Btu/hr natural gas P.U. Sand Heater #12. Non-Natural Gas related particulate emissions from the P.U. Sand Heater #12 are captured and controlled by Baghouse T, exhausting through Stack T.

One (1) Sand Weigh Hopper #12. The particulate emissions from the Sand Weigh Hopper #12 are captured and controlled by Baghouse T, exhausting through Stack T.

Core Wash, nominal throughput of 7.5 tons of sand per hour

Three (3) Core Wash Dip Tanks #35, #36 & #37. No VOC emissions from core wash used in Core Wash Dip Tanks #35, #36 & #37.

### VOC emissions - Methodology

Uncontrolled Emissions (ton/yr) = Annual Throughput (ton/yr) x Emission Factor (lb/ton) / 2,000 lb/ton

Controlled Emissions (ton/yr) = (Uncaptured Emissions x (Limited Throughput / Maximum Throughput)) x Capture Efficiency x (1 - Control Efficiency)

Controlled Stack Emissions PTE (ton/yr) = [Captured resin - core machines + catalyst + core wash + core box cleaner + release agent emission factor (lb/ton) x Annual Throughput (ton/yr)] / 2,000 lb/ton

Limited Uncaptured and Uncontrolled and Limited Controlled Emissions (tons/yr) - TOTAL = Limited Uncaptured and Uncontrolled Emissions + Limited Controlled Emissions - from stack
### Phenolic Urethane Core Making Line #4

**Replacement of core machine #25.**

**Emission Unit**

<table>
<thead>
<tr>
<th>Installation Date</th>
<th>Nominal Throughput</th>
<th>Annual Throughput</th>
</tr>
</thead>
<tbody>
<tr>
<td>TBD</td>
<td>7 ton/hr</td>
<td>61,320 ton/yr</td>
</tr>
</tbody>
</table>

**Limited Capacity:** proposed unit 12,910 ton/yr

### PTE - Regulated Pollutants

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt;</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt;</th>
<th>VOCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Handling process</td>
<td>3.6</td>
<td>0.04</td>
<td>0.04</td>
<td>0.79</td>
</tr>
<tr>
<td>resin - mixer (Uncaptured)</td>
<td>0.84</td>
<td>0.84</td>
<td>0.84</td>
<td>0.84</td>
</tr>
<tr>
<td>resin - core machines (Captured and Uncaptured)</td>
<td>2.750</td>
<td>2.750</td>
<td>2.750</td>
<td>2.750</td>
</tr>
<tr>
<td>resin - core machines (Captured and Controlled)</td>
<td>2.750</td>
<td>2.750</td>
<td>2.750</td>
<td>2.750</td>
</tr>
<tr>
<td>core box cleaner (Uncaptured)</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>core box cleaner (Captured and Controlled)</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>core box cleaner (Uncaptured)</td>
<td>0.749</td>
<td>0.749</td>
<td>0.749</td>
<td>0.749</td>
</tr>
<tr>
<td>core box cleaner (Captured and Controlled)</td>
<td>0.749</td>
<td>0.749</td>
<td>0.749</td>
<td>0.749</td>
</tr>
<tr>
<td>Core Sand Handling process</td>
<td>2.750</td>
<td>2.750</td>
<td>2.750</td>
<td>2.750</td>
</tr>
<tr>
<td>Uncontrolled PTE (ton/hr)</td>
<td>0.23</td>
<td>0.23</td>
<td>0.23</td>
<td>0.23</td>
</tr>
<tr>
<td>Uncontrolled PTE (ton/hr)</td>
<td>90.75</td>
<td>90.75</td>
<td>90.75</td>
<td>90.75</td>
</tr>
<tr>
<td>Limited Uncaptured and Uncontrolled Emissions (ton/yr)</td>
<td>90.75</td>
<td>90.75</td>
<td>90.75</td>
<td>90.75</td>
</tr>
<tr>
<td>PSD Miner Limits (ton/hr)</td>
<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
<td>3.6</td>
</tr>
<tr>
<td>Control Efficiency (%)</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Controlled PTE (ton/hr)</td>
<td>10.11</td>
<td>10.11</td>
<td>10.11</td>
<td>10.11</td>
</tr>
<tr>
<td>Limited Controlled Emissions (ton/hr) - from stack</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
</tr>
<tr>
<td>PSD Miner Limits (ton/hr)</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
<td>0.37</td>
</tr>
</tbody>
</table>

**PM Control Device**

- **Baghouse U**

### Core Sand Handling Process, nominal throughput of 7.0 tons of sand per hour

**One (1) South (S) Sand Silo** - located one (1) East Sand Silo, each with an integral bin vent to control particulate emissions when loading.

**One (1) enclosed Pneumatic Sand Transporter #7** for transferring sand from the South (S) Sand Silos to P.U. Core Sand Hopper #4.

**One (1) enclosed Pneumatic Sand Transporter #8** for transferring sand from the East (E) Sand Silos to P.U. Core Sand Hopper #4.

**One (1) Phenolic Urethane Core Sand Hopper #4.** Particulate emissions from the P.U. Core Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

**One (1) enclosed Pneumatic Sand Transporter #4.** Particulate emissions from the P.U. Core Hopper #4 are captured and controlled by Baghouse U, exhausting through Stack U.

**One (1) Sand Wash Dip Tank #25.** The particulate emissions from the Sand Wash Dip Tank #25 are uncontrolled and uncontrolled, venting into the building. (Note: Unit was not included in original permit list).

**Core Wash, nominal throughput of 7.0 ton of sand per hour**

**One (1) Core Wash Dip Tank #25.** VOC emissions from core wash used in Core Wash Dip Tank #25 are uncontrolled.

**Methodology**

- **Sand Handling Particulate Emission Factors** for uncontrolled emissions are from WebFIRE, SCC 3-04-003-50 (Sand Grinding/Handling).

- **Controlled Emission Factors** were provided by Dalton Foundry.

- **PM**

- **PM<sub>10</sub>**

- **PM<sub>2.5</sub>**

- **VOCs**

- **Emission Factors**

- **Throughput (tons/yr)**

- **Annual Throughput (ton/yr)**

- **Uncontrolled Emission (ton/yr) = Annual Throughput (ton/yr) x Emission Factor (lb/ton)/2,000 lb/ton**

- **PM Control Catalyst VOC Emission Factor**

- **Fugitive Emissions (ton/yr) = (Uncaptured Emissions x (Limited Capacity / Annual Throughput)) x (1 - Capture Efficiency)**

- **Controlled Emission (ton/yr) = (Uncaptured Emissions x (Limited Capacity / Annual Throughput)) x Capture Efficiency x (1 - Control Efficiency)**

- **VOC emissions - Methodology**

- **Uncontrolled Emissions (lb/hr) = (Uncaptured Emissions x (Limited Capacity / Annual Throughput)) x (1 - Capture Efficiency)**

- **Controlled Emissions (lb/hr) = (Uncaptured Emissions x (Limited Capacity / Annual Throughput)) x Capture Efficiency x (1 - Control Efficiency)**

- **PM Control Device - Stack Vent Process**

- **PSD Minor Limits (lb/ton)**

- **326 IAC 6-3-2 Particulate Emission Rate Limitations**

- **Permit Reviewer:** Rihika Reddy
## Natural Gas Combustion

### Heat Input Capacity (MMBtu/hr)

<table>
<thead>
<tr>
<th>Source Name</th>
<th>Potential Throughput (MMCF/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Oven #12</td>
<td>2.4</td>
</tr>
<tr>
<td>P.U. Sand Heater #12</td>
<td>0.192</td>
</tr>
</tbody>
</table>

### Potential Emission (tons/yr)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>1.9</td>
<td>7.6</td>
<td>7.6</td>
<td>0.6</td>
<td>100</td>
<td>5.5</td>
<td>84.0</td>
</tr>
</tbody>
</table>

**Calculation Methodology**

All emission factors are based on normal firing.

- **MMBtu** = 1,000,000 Btu
- **MMCF** = 1,000,000 Cubic Feet of Gas
- **Potential Throughput (MMCF)** = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
- Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)
- Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton

### HAPs - Organics

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Dichlorobenzene</th>
<th>Formaldehyde</th>
<th>Hexane</th>
<th>Toluene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>2.1E-03</td>
<td>1.2E-03</td>
<td>7.5E-02</td>
<td>1.8E+00</td>
<td>3.4E-03</td>
</tr>
</tbody>
</table>

**Potential Emission in tons/yr**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Core Ovens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>1.8E-06</td>
</tr>
<tr>
<td>Dichlorobenzene</td>
<td>1.0E-06</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>6.3E-05</td>
</tr>
<tr>
<td>Hexane</td>
<td>1.5E-03</td>
</tr>
<tr>
<td>Toluene</td>
<td>2.9E-06</td>
</tr>
</tbody>
</table>

### HAPs - Metals

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Lead (Pb)</th>
<th>Cadmium</th>
<th>Chromium</th>
<th>Manganese</th>
<th>Nickel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/MMCF</td>
<td>5.0E-04</td>
<td>1.1E-03</td>
<td>1.4E-03</td>
<td>3.8E-04</td>
<td>2.1E-03</td>
</tr>
</tbody>
</table>

**Potential Emission in tons/yr**

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Core Ovens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (Pb)</td>
<td>4.2E-07</td>
</tr>
<tr>
<td>Cadmium</td>
<td>9.3E-07</td>
</tr>
<tr>
<td>Chromium</td>
<td>1.2E-06</td>
</tr>
<tr>
<td>Manganese</td>
<td>3.2E-07</td>
</tr>
<tr>
<td>Nickel</td>
<td>1.8E-06</td>
</tr>
</tbody>
</table>

### Total HAPs

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Core Ovens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>4.20E-07</td>
</tr>
<tr>
<td></td>
<td>9.25E-07</td>
</tr>
<tr>
<td></td>
<td>1.18E-06</td>
</tr>
<tr>
<td></td>
<td>3.20E-07</td>
</tr>
<tr>
<td></td>
<td>1.77E-06</td>
</tr>
<tr>
<td></td>
<td>0.00</td>
</tr>
</tbody>
</table>
**Appendix A: Emissions Calculations**

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

**Finishing Stations**

| Total Maximum Capacity: 35,040 tons per year of finished metal throughput |
|-----------------------------|-----------------------------|
| Total Hourly Capacity: 1.0 tons per hour of finished metal per station |
| Total Number of Stations: 4 |
| Limited Capacity: 17,500 tons per year of finished metal |

### Emissions

<table>
<thead>
<tr>
<th>Emission</th>
<th>PM</th>
<th>PM&lt;sub&gt;10&lt;/sub&gt;</th>
<th>PM&lt;sub&gt;2.5&lt;/sub&gt;</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled PTE (lb/hr)</td>
<td>17</td>
<td>1.70</td>
<td>1.70</td>
<td>0.058</td>
</tr>
<tr>
<td>Uncontrolled PTE (ton/yr)</td>
<td>297.84</td>
<td>29.78</td>
<td>29.78</td>
<td>1.02</td>
</tr>
<tr>
<td>Capture Efficiency (%)</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Uncontrolled Stack PTE (tons/yr)</td>
<td>294.86</td>
<td>29.49</td>
<td>29.49</td>
<td>1.01</td>
</tr>
<tr>
<td>Limited Uncaptured and Uncontrolled Emissions (tons/yr)</td>
<td>1.49</td>
<td>0.15</td>
<td>0.15</td>
<td>0.01</td>
</tr>
<tr>
<td>Control Efficiency (%)</td>
<td>90%</td>
<td>75%</td>
<td>45%</td>
<td>35%</td>
</tr>
<tr>
<td>Controlled PTE (ton/yr)</td>
<td>29.49</td>
<td>7.37</td>
<td>16.22</td>
<td>0.65</td>
</tr>
<tr>
<td>Limited Emissions After Control (ton/yr)</td>
<td>14.73</td>
<td>3.68</td>
<td>8.10</td>
<td>0.33</td>
</tr>
</tbody>
</table>

### PSD Minor Limits - After Control (lb/ton)

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Station #ZZ1</td>
<td>1.00</td>
<td>4.10</td>
</tr>
<tr>
<td>Station #ZZ2</td>
<td>1.00</td>
<td>4.10</td>
</tr>
<tr>
<td>Station #ZZ3</td>
<td>1.00</td>
<td>4.10</td>
</tr>
<tr>
<td>Station #ZZ4</td>
<td>1.00</td>
<td>4.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>326 IAC 6-3-2 Allowable Particulate Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Unit</td>
</tr>
<tr>
<td>Station #ZZ1</td>
</tr>
<tr>
<td>Station #ZZ2</td>
</tr>
<tr>
<td>Station #ZZ3</td>
</tr>
<tr>
<td>Station #ZZ4</td>
</tr>
</tbody>
</table>

**Calculation Methodology**

\[ Pb = \text{Lead} \]

PM and PM10 Emission Factors from FIRE 3-04-003-40. Assumes PM2.5 = PM10. Pb emissions are based on an estimate by the source.

Capture and control efficiencies provided by source. In addition, PSD minor limits were proposed by the source.

Uncontrolled PTE (lb/hr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal)

Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton

Uncontrolled Stack PTE (tons/yr) = Uncontrolled PTE (tons/yr) x Capture Efficiency (%)

Uncontrolled/Uncaptured Emissions PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Capture Efficiency (%))

Controlled PTE (tons/yr) = Uncontrolled Emissions x Capture Efficiency x (1 - Control Efficiency)

Limited Uncaptured and Uncontrolled Emissions (tons/yr) = Limited throughput (tons/yr) x Emission Factor (lb/ton finished metal) / 2,000 (lb/ton) x (1 - Capture Efficiency (%))

Limited Emissions After Control (ton/yr) = Limited Capacity (ton finished metal/yr) x PSD Minor Limits - After Control (lb/ton) x 1/2,000 (ton/lb)

PSD Minor Limits - After Control (lb/ton) = WebFire Emission Factor (lb/ton of finished metal) x Capture Efficiency (%) x (1 - Control Efficiency (%))
The Vibratory Shaker VB1 was installed in 2010, permitted in 2011 (SSM No. 085-29402-00003).

The Permittee has applied for changes in the limited throughput and limited lb/ton emission rates for VB1 in MPM 39197.

<table>
<thead>
<tr>
<th>Process / Emission Unit</th>
<th>SSM 29402</th>
<th>After Re-Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PM*</td>
<td>PM$_{10}$</td>
</tr>
<tr>
<td>Limited Emission Factor (lb/ton) (PSD Minor Limits in permit)</td>
<td>0.188</td>
<td>0.154</td>
</tr>
<tr>
<td>Limited Throughput (tons/yr) (PSD Minor Limit in permit)</td>
<td>142000.000</td>
<td>142000.000</td>
</tr>
<tr>
<td>Vibratory Shaker VB1 (stack emissions), tons/yr</td>
<td>13.35</td>
<td>10.93</td>
</tr>
<tr>
<td>Vibratory Shaker - uncaptured, tons/yr</td>
<td>4.54</td>
<td>1.06</td>
</tr>
<tr>
<td>Hose Blast for SB#8 - stack*, tons/yr</td>
<td>5.55</td>
<td>2.78</td>
</tr>
<tr>
<td>Hose Blast for SB#8 - uncaptured*, tons/yr</td>
<td>1.40</td>
<td>0.14</td>
</tr>
<tr>
<td>Total for 2010 Modification (tons/yr):</td>
<td>24.84</td>
<td>14.91</td>
</tr>
<tr>
<td>PSD Significant Levels, tons/yr</td>
<td>25.00</td>
<td>15.00</td>
</tr>
</tbody>
</table>

* Based on TSD Appendix A of SSM No. 085-29402-00003

**Methodology**

Stack Emissions (tons/yr) = Limited Emission Factor (lb/ton) x Limited Throughput (tons/yr) /2000 lb/ton
**Appendix A: Emissions Calculations**

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>Limited Throughput (tons/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposed Throughput Limit (MPM 39197)</td>
<td>30000 tons/yr</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM</th>
<th>PM10</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebFIRE Emission Factor (lb/ton)</td>
<td>3.2</td>
<td>2.24</td>
</tr>
<tr>
<td>Uncontrolled (limited) PTE (ton/yr)</td>
<td>48.00</td>
<td>33.60</td>
</tr>
<tr>
<td>Capture Efficiency</td>
<td>98%</td>
<td>98%</td>
</tr>
<tr>
<td>Uncaptured Emissions (tons/yr)</td>
<td>0.960</td>
<td>0.672</td>
</tr>
<tr>
<td>Proposed PSD Minor Limits (lb/ton) (uncaptured)</td>
<td>0.064</td>
<td>0.0448</td>
</tr>
</tbody>
</table>

**Vibratory Shaker VB1**

**Methodology**

Emission factors for uncontrolled emissions are from WebFIRE, SCC 3-04-003-31 (Casting Shakeout)

Uncontrolled (limited) Emission (tons/yr) = Limited Throughput (ton/yr) x Emission Factor (lb/ton)/2,000 lb/ton

Uncaptured Emissions (tons/yr) = (Uncontrolled (limited) Emissions) x (1 - Capture Efficiency)

Proposed PSD Minor Limit (lb/ton) = Uncaptured Emissions (tons/yr) X 2000 lb/ton/ Limited Throughput (tons/yr)
Appendix A: Emissions Calculations

Source Name: Dalton Corporation - Warsaw Manufacturing Facility

Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580

Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Cupola Charge Handling

Installation Date(s): Prior to 1977

Maximum Capacity: 468,222 tons per year of melted metal, coke & limestone

Limited Capacity: 199,194 tons per year of metal charged

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>PSD Minor Limit (ton/yr)</th>
<th>326 IAC 6-3-2 (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>0.6</td>
<td>140.5</td>
<td>59.8</td>
<td>198.0</td>
</tr>
<tr>
<td>PM10/PM2.5</td>
<td>0.36</td>
<td>84.3</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>HAP - Lead (Pb)</td>
<td>0.002</td>
<td>0.5</td>
<td>0.2</td>
<td></td>
</tr>
</tbody>
</table>

Process Weight, P (ton/hr) = 53.45

Calculation Methodology

The annual metal limit and emission factors for the Cupola Charge Handling were derived from SSM 085-PM/PM10 Emission factor from FIRE 3-04-003-15.

Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = Limited Capacity (ton metal/year) x Emission Factor (lb/ton metal) x 1 ton/2000 lb

Emissions from cupola charge handling are not controlled.
Appendix A: Emissions Calculations
Source Name: Dalton Corporation - Warsaw Manufacturing Facility
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580

Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Cupola Melt Furnace
Installation Date(s): Prior to 1977

Limited Capacity: 187,919 tons per year of melted metal
Maximum Capacity: 424,860 tons per year of melted metal, coke & limestone
48.5 tons per hour of metal

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factors</th>
<th>Uncontrolled PTE</th>
<th>Limited Emission</th>
<th>PSD Minor Limit (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>13.8</td>
<td>2931.5</td>
<td>0.821</td>
<td>77.14</td>
</tr>
<tr>
<td>PM2.5</td>
<td>12.4</td>
<td>2634.1</td>
<td>0.738</td>
<td>69.34</td>
</tr>
<tr>
<td>PM10</td>
<td>12.4</td>
<td>2634.1</td>
<td>--</td>
<td>69.34</td>
</tr>
<tr>
<td>SO2</td>
<td>1.25</td>
<td>266.5</td>
<td>1.25</td>
<td>117.45</td>
</tr>
<tr>
<td>NOx</td>
<td>0.1</td>
<td>21.2</td>
<td>0.42</td>
<td>39.46</td>
</tr>
<tr>
<td>VOC</td>
<td>0.18</td>
<td>38.2</td>
<td>0.009</td>
<td>0.85</td>
</tr>
<tr>
<td>CO</td>
<td></td>
<td>30802.4</td>
<td>7.250</td>
<td>681.21</td>
</tr>
<tr>
<td>HAP - Lead (Pb)</td>
<td>1.1</td>
<td>233.7</td>
<td>0.002</td>
<td>0.19</td>
</tr>
<tr>
<td>HAP: Metals</td>
<td>13.8</td>
<td>2931.5</td>
<td>0.821</td>
<td>77.14</td>
</tr>
</tbody>
</table>

Calculation Methodology
The annual metal limit and emission factors for the Cupola Melt Furnace were derived from SSM 085-14027-00003, issued
PM, PM10, SO2, Nox, VOC, CO, Pb uncontrolled emission factors from FIRE 3-04-003-01
Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton
Limited PTE (ton/yr) = Limited Capacity (ton metal/yr) x Emission Factor (lb/ton metal) x 1 ton/2000 lb
All PM emissions are also HAP-Metals emissions.
The emissions from the melt furnace are controlled by Wet Scrubber A and 3 afterburners.
The charge door emissions are controlled by Baghouse #14.

Greenhouse Gas

<table>
<thead>
<tr>
<th>Emission Factor in lb/ton</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5,578.99</td>
<td>0.60</td>
<td>0.09</td>
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<tr>
<td>Potential Emission in tons/yr</td>
<td>142.217</td>
<td>15</td>
<td>2</td>
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<tr>
<td>Summed Potential Emissions in tons/yr</td>
<td>142.235</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO2e Total in tons/yr</td>
<td>143.231</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>62.904</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Limited CO2e Total in tons/yr</td>
<td>62,912</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>63,352</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Methodology
Pursuant to Table C-1 of 40 CFR Part 98 Subpart C, coke has a default high heat value of 24.8 MMBtu/ton
Emission Factors from Tables C-1 and 2 of 40 CFR Part 98 Subpart C and have been converted from kg/MMBtu to lb/ton.
GHG regulations have emission factors based upon coke usage and not emissions factors for metal. In order to relate between coke and metal, a ratio of coke usage to metal usage (0.12).
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Emission (tons/yr) = Throughput (tons/yr) x Emission Factor (lb/ton/2.000 lb/ton)
CO2e (tons/yr) = CO2 Potential Emission tons/yr x CO2 GWP (1) + CH4 Potential Emission tons/yr x CH4 GWP (21) + N2O Potential Emission tons/yr x N2O GWP (310).
### Herman 2 Mold Line

**Installation Date(s):** Prior to 1977

- **Limited Capacity:** 1,127,516 tons per year of core and mold sand handled
- **Maximum Capacity:** 324,120 tons per year of metal throughput
  - 1,454,160 tons per year of sand throughput
  - 37 tons per hour of metal
  - 166 tons per hour of sand

#### PSD Minor Limits

- **PM** (ton/yr) = 257.0
- **PM10** (ton/yr) = 257.0
- **PM2.5** (ton/yr) = 257.0
- **VOC** (ton/yr) = 960.27
- **CO** (ton/yr) = 5334.84
- **HAP - Lead (Pb)** (ton/yr) = 14.55
- **HAP - Metals** (ton/yr) = 421.19

#### Calculation Methodology

Pouring & Casting/Cooling:

- EF for PM, PM10 and VOC from site specific stack tests. SO2 and NOX EF from FIRE 3-04-003-18
- All PM emissions are also HAP-Metals emissions.
- Particulate emissions from shakeout are controlled by Wet Collector #3.
- The Wet Collector #3 is common to Herman 2 Shakeout & Klein Transport PF504-5.

Sand Handling:

- Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand)/hour) x Emission Factor (lb/(ton sand)) x 8760 hr/yr / 2000 lb/ton
- Limited PTE (ton/yr) = Limited Capacity ((ton sand)/year) x Emission Factor (lb/(ton sand)) x 1 ton/2000 lb
- Particulate emissions from sand handling are controlled by Baghouse #1 and Baghouse #13.

Waste Sand Handling - Klein Transport:

- Uncontrolled PTE (ton/yr) = Max Capacity ((ton sand + metal)/hour) x Emission Factor (lb/(ton sand + metal)) x 8760 hr/yr / 2000 lb/ton
- Limited PTE (ton/yr) = Limited Capacity ((ton sand + metal)/year) x Emission Factor (lb/(ton sand + metal)) x 1 ton/2000 lb
- Particulate emissions are also HAP-Metals emissions.

#### Emissions Calculations

<table>
<thead>
<tr>
<th>Category</th>
<th>Pollutant</th>
<th>Emission Factors</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Limited PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pouring</td>
<td>PM</td>
<td>0.118</td>
<td>104.56</td>
<td>66.30</td>
</tr>
<tr>
<td></td>
<td>PM10</td>
<td>0.052</td>
<td>46.59</td>
<td>29.54</td>
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<tr>
<td></td>
<td>PM2.5</td>
<td>0.052</td>
<td>46.59</td>
<td>29.54</td>
</tr>
<tr>
<td></td>
<td>SO2</td>
<td>0.020</td>
<td>17.78</td>
<td>11.28</td>
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<td></td>
<td>NOX</td>
<td>0.010</td>
<td>8.89</td>
<td>5.64</td>
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<tr>
<td></td>
<td>VOC</td>
<td>0.163</td>
<td>144.93</td>
<td>91.89</td>
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<td></td>
<td>CO</td>
<td>1.800</td>
<td>1600.45</td>
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<td>HAP - Pb</td>
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<td>14.23</td>
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</tr>
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<td>HAP - Metals</td>
<td>0.118</td>
<td>104.56</td>
<td>66.30</td>
</tr>
<tr>
<td>Casting/Cooling</td>
<td>PM</td>
<td>0.288</td>
<td>256.16</td>
<td>162.42</td>
</tr>
<tr>
<td></td>
<td>PM10</td>
<td>0.196</td>
<td>174.18</td>
<td>110.44</td>
</tr>
<tr>
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<td>PM2.5</td>
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<td>174.18</td>
<td>110.44</td>
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<td></td>
<td>CO</td>
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<td>1623.62</td>
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<td>HAP - Metals</td>
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<td>256.16</td>
<td>162.42</td>
</tr>
<tr>
<td>Shakeout</td>
<td>PM</td>
<td>0.034</td>
<td>30.23</td>
<td>19.17</td>
</tr>
<tr>
<td></td>
<td>PM10</td>
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<td>51.57</td>
<td>32.70</td>
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<tr>
<td></td>
<td>PM2.5</td>
<td>0.058</td>
<td>51.57</td>
<td>32.70</td>
</tr>
<tr>
<td></td>
<td>VOC</td>
<td>0.115</td>
<td>102.25</td>
<td>64.83</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>1.320</td>
<td>1173.66</td>
<td>744.16</td>
</tr>
<tr>
<td></td>
<td>HAP - Pb</td>
<td>0.00018</td>
<td>0.16</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>HAP - Metals</td>
<td>0.034</td>
<td>30.23</td>
<td>19.17</td>
</tr>
<tr>
<td>Sand Handling</td>
<td>PM</td>
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<td>30.23</td>
<td>19.17</td>
</tr>
<tr>
<td></td>
<td>PM10</td>
<td>0.058</td>
<td>51.57</td>
<td>32.70</td>
</tr>
<tr>
<td></td>
<td>PM2.5</td>
<td>0.058</td>
<td>51.57</td>
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<tr>
<td></td>
<td>VOC</td>
<td>0.115</td>
<td>102.25</td>
<td>64.83</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>1.320</td>
<td>1173.66</td>
<td>744.16</td>
</tr>
<tr>
<td></td>
<td>HAP - Pb</td>
<td>0.00018</td>
<td>0.16</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>HAP - Metals</td>
<td>0.034</td>
<td>30.23</td>
<td>19.17</td>
</tr>
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<td>Waste Sand Handling - Klein Transport</td>
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<td>11.34</td>
</tr>
<tr>
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<td>PM2.5</td>
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<td>11.34</td>
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<tr>
<td></td>
<td>VOC</td>
<td>0.115</td>
<td>102.25</td>
<td>64.83</td>
</tr>
<tr>
<td></td>
<td>CO</td>
<td>1.320</td>
<td>1173.66</td>
<td>744.16</td>
</tr>
<tr>
<td></td>
<td>HAP - Pb</td>
<td>0.00018</td>
<td>0.16</td>
<td>0.10</td>
</tr>
<tr>
<td></td>
<td>HAP - Metals</td>
<td>0.034</td>
<td>30.23</td>
<td>19.17</td>
</tr>
<tr>
<td>Total Emissions</td>
<td>Uncontrolled PTE</td>
<td>257.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limited PTE</td>
<td>257.0</td>
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<td></td>
</tr>
</tbody>
</table>

### Notes

- The annual sand limit and emission factors for Herman 2 were derived from SMS 085-14027-00003, issued on February 22, 2002.
- Particulate emissions from pouring and casting/cooling are not controlled.
<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Control Efficiency</th>
<th>Capture Efficiency</th>
<th>Emission Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM2.5</td>
<td>94.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM10</td>
<td>94.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VOC</td>
<td>94.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO</td>
<td>94.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP</td>
<td>94.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HAP - Lead (Pb)</td>
<td>94.1%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Emission factors for uncontrolled emissions are from AP-42, Chapter 13.2.4.

\[ EF (lb/ton) = k (0.0032) \left( \frac{U}{5} \right)^{1.3} \left( \frac{M}{2} \right)^{1.4} \]

where:
- \( U \) = mean wind speed, mph
- \( M \) = moisture content, %
- \( k \) = particle size multiplier
- \( kPM \) = K factor

PSD Minor Limit 326 IAC 6-3-2

Significant Source Modification No.: 085-39431-0003

Appendix A: Emissions Calculations

Maximum Capacity: 1,445,400 tons per year of sand throughput

Limited Capacity: 1,45 tons per hour of dust - sand transport system

165 tons per hour of sand

28 tons per hour of metal

Overall Control Efficiency:

94.1%

HAP - Lead (Pb) Control Efficiency:

95%

Installation Date(s):


The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on December 9, 2003.

The Sonoperoxone® system is common to Herman 3 Pouring, Castings Cooling, Shakeout, and Sand Handling.

VOC emissions from Herman 3 Pouring Station, Castings Cooling, Shakeout, and Sand Handling are controlled by the Sonoperoxone system.

The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on December 9, 2003.

The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on December 9, 2003.

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The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on December 9, 2003.

The annual sand limit and emission factors for Herman 3 were derived from SSM 085-14027-00003, issued on December 9, 2003.
Inclined Shakeout and Sort System
Installation Date(s): Prior to 1977

Maximum Capacity: 424,860 tons per year of metal throughput
48.5 tons per hour of metal

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Limited Emission Factors (lb/ton)</th>
<th>PSD Minor Limit Limited PTE (ton/yr)</th>
<th>326 IAC 6-3-2 Limited PTE E (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>3.2</td>
<td>155.20</td>
<td>0.072</td>
<td>15.29</td>
<td>194.0</td>
</tr>
<tr>
<td>PM_{10}</td>
<td>2.24</td>
<td>108.64</td>
<td>0.072</td>
<td>15.29</td>
<td></td>
</tr>
<tr>
<td>PM_{2.5}</td>
<td>1.34</td>
<td>64.99</td>
<td>0.072</td>
<td>15.29</td>
<td></td>
</tr>
</tbody>
</table>

Process Weight, P (ton/hr) = 48.5

Calculation Methodology
The emission factors for the Inclined Shakeout and Sort System were derived from AP-42 12.10-9. The emission factors for the Inclined Shakeout and Sort System were derived from SSM 085-14027-
Uncontrolled PTE (ton/yr) = Controlled PTE (lb/hr) x 8760 hr/yr / 2000 lb/ton
Limited PTE (ton/yr) = Emission Factor (lb/ton) x Capacity (ton/hr) x 8760 hr/yr / 2000 lb/ton
Particulate emissions from the inclined shakeout and sort system are controlled by Baghouse #2.

Vibratory shaker
The vibratory shaker station will assist in the removal of sand from casting cavities prior to casting finish.

Nominal Throughput: 48.5 ton/hr
Limited Capacity: 142,000 ton/yr

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Fugitives (ton/yr)</th>
<th>Limited Emission Factors (lb/ton)</th>
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</thead>
<tbody>
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PSD Minor Limit 326 IAC 6-3-2
<table>
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<tr>
<th>(ton/yr)</th>
<th>(ton/yr)</th>
</tr>
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<td>13.35</td>
<td>194.0</td>
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<tr>
<td>10.93</td>
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</tbody>
</table>
Appendix A: Emissions Calculations

Source Name: Dalton Corporation - Warsaw Manufacturing Facility
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580
Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Waste Sand Handling, Screening and Transport System
Installation Date(s): Prior to 1977

Limited Capacity: 112,752 tons per year of waste sand throughput
Maximum Capacity: 175,200 tons per year of waste sand throughput
20 tons per hour of waste sand

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Limited Emission Factors (lb/ton)</th>
<th>PSD Minor Limit (ton/yr)</th>
<th>326 IAC 6-3-2 E (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>3.6</td>
<td>315.36</td>
<td>0.072</td>
<td>4.06</td>
<td>159.7</td>
</tr>
<tr>
<td>PM&lt;sub&gt;10&lt;/sub&gt;</td>
<td>0.54</td>
<td>47.30</td>
<td>0.011</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>PM&lt;sub&gt;2.5&lt;/sub&gt;</td>
<td>0.54</td>
<td>47.30</td>
<td>0.011</td>
<td>0.62</td>
<td></td>
</tr>
</tbody>
</table>

Process Weight, P (ton/hr) = 20

Calculation Methodology
The annual metal limit and emission factors for the Inclined Shakeout and Sort System were derived from
## Shot Blast Machines

### 1. Process Description

<table>
<thead>
<tr>
<th>Emission Unit ID</th>
<th>Maximum Capacity (tons/hr finished metal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-1</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-2</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-3</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-4</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-5</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-6</td>
<td>6.00</td>
</tr>
<tr>
<td>SB-7</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-8</td>
<td>5.00</td>
</tr>
<tr>
<td>SB-9</td>
<td>12.50</td>
</tr>
<tr>
<td>SB-10</td>
<td>5.00</td>
</tr>
<tr>
<td>Hose Blast for SB-8</td>
<td>8.00</td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>8.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65.50</strong></td>
</tr>
</tbody>
</table>

*This blast machine will be modified with additional shot wheels to increase the throughput of the machine.*

### 2. Uncontrolled Emissions

<table>
<thead>
<tr>
<th>Process</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cleaning, finishing (SCC 3-04-003-40) (SB 1 - SB-8, SB-10, Hose Blast for SB-8, SB-10 Blow-off Chamber)</td>
<td>17</td>
<td>1.7</td>
<td>1.7</td>
<td>0.058</td>
</tr>
<tr>
<td>Cleaning, finishing (SCC 3-04-003-40) (SB 9)</td>
<td>17</td>
<td>1.7</td>
<td>1.34</td>
<td>0.058</td>
</tr>
</tbody>
</table>

1 PM and PM10 Emission Factors from FIRE 3-04-003-40. Assumes PM2.5 = PM10

<table>
<thead>
<tr>
<th>Process</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-1</td>
<td>43,800</td>
<td>372.30</td>
<td>37.23</td>
<td>37.23</td>
</tr>
<tr>
<td>SB-2</td>
<td>43,800</td>
<td>372.30</td>
<td>37.23</td>
<td>37.23</td>
</tr>
<tr>
<td>SB-3</td>
<td>26,280</td>
<td>223.38</td>
<td>22.34</td>
<td>22.34</td>
</tr>
<tr>
<td>SB-4</td>
<td>43,800</td>
<td>372.30</td>
<td>37.23</td>
<td>37.23</td>
</tr>
<tr>
<td>SB-5</td>
<td>26,280</td>
<td>223.38</td>
<td>22.34</td>
<td>22.34</td>
</tr>
<tr>
<td>SB-6</td>
<td>52,560</td>
<td>446.76</td>
<td>44.68</td>
<td>44.68</td>
</tr>
<tr>
<td>SB-7</td>
<td>26,280</td>
<td>223.38</td>
<td>22.34</td>
<td>22.34</td>
</tr>
<tr>
<td>SB-8</td>
<td>109,500</td>
<td>930.75</td>
<td>93.08</td>
<td>73.37</td>
</tr>
<tr>
<td>SB-9</td>
<td>43,800</td>
<td>372.30</td>
<td>37.23</td>
<td>37.23</td>
</tr>
<tr>
<td>Hose Blast for SB-8</td>
<td>58,610</td>
<td>505.68</td>
<td>50.57</td>
<td>50.57</td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>43,800</td>
<td>372.30</td>
<td>37.23</td>
<td>37.23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>573,780</strong></td>
<td><strong>4,877.13</strong></td>
<td><strong>487.71</strong></td>
<td><strong>468.00</strong></td>
</tr>
</tbody>
</table>

### 3. Uncaptured Emissions - Unlimited

<table>
<thead>
<tr>
<th>Process</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-9</td>
<td>98%</td>
<td>89%</td>
<td>89%</td>
<td>89%</td>
</tr>
<tr>
<td>Hose Blast for SB-8</td>
<td>80%</td>
<td>80%</td>
<td>NA</td>
<td>80%</td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>89%</td>
<td>80%</td>
<td>NA</td>
<td>80%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Process</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-9</td>
<td>98%</td>
<td>89%</td>
<td>89%</td>
<td>89%</td>
</tr>
<tr>
<td>Hose Blast for SB-8</td>
<td>96%</td>
<td>96%</td>
<td>NA</td>
<td>96%</td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>96%</td>
<td>96%</td>
<td>NA</td>
<td>96%</td>
</tr>
</tbody>
</table>

### Emission Factor (lb/ton)

<table>
<thead>
<tr>
<th>Emission Unit ID</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-9</td>
<td>18.92</td>
<td>18.24</td>
<td>8.07</td>
<td>0.36</td>
</tr>
<tr>
<td>Hose Blast for SB-8</td>
<td>5.96</td>
<td>5.96</td>
<td>5.96</td>
<td>0.10</td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>40.36</td>
<td>7.46</td>
<td>7.46</td>
<td>0.20</td>
</tr>
</tbody>
</table>
### Shot Blast Machines

#### 4. Limited Emissions - Stack

<table>
<thead>
<tr>
<th>Emission Unit ID</th>
<th>Limited Throughput (tons/yr finished metal)</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-1</td>
<td>112,752</td>
<td>28.56</td>
<td>28.56</td>
<td>28.56</td>
<td>0.25</td>
</tr>
<tr>
<td>SB-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>20,000</td>
<td>6.05</td>
<td>10.88</td>
<td>10.88</td>
<td>0.58</td>
</tr>
<tr>
<td>SB-9 (SSM #33121)</td>
<td>60,500</td>
<td>5.04</td>
<td>4.58</td>
<td>3.61</td>
<td>0.14</td>
</tr>
</tbody>
</table>

#### 5. Uncaptured Emissions - Limited

<table>
<thead>
<tr>
<th>Emission Unit ID</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB-1</td>
<td>10.29</td>
<td>5.66</td>
<td>4.46</td>
<td>0.10</td>
</tr>
<tr>
<td>SB-2</td>
<td>1.40</td>
<td>0.14</td>
<td>0.14</td>
<td>0.00</td>
</tr>
<tr>
<td>SB-10 Blow-off chamber</td>
<td>18.70</td>
<td>3.40</td>
<td>3.40</td>
<td>0.12</td>
</tr>
</tbody>
</table>

#### Methodology

Emission factors for uncontrolled emissions are from WebFIRE, SCC 3-04-003-40 (Grinding/Cleaning).

Controlled Emission Factors were provided by Dalton Foundry.

Controlled Emissions (tons/yr) = (Uncontrolled Emissions x Limited Throughput / Maximum Throughput) x Capture Efficiency x (1 - Control Efficiency)

The annual metal limit and emission factors for the Shot Blasting Machines were derived from SSM 085-14027-00003, issued on February 22, 2002.

The emission factors for Shot Blasting Machines SB-10 and SB-11 were derived from SSM 085-22046-00003, issued on March 23, 2006.

Baghouse #3 is common to SB-1, SB-2, SB-3, & SB-4 & SB-10.

Baghouse #6 is common to SB-7, GR-19, GR-20, GR-22, GR-25, GR-26, GR-34, GR-35, & GR-36.

Baghouse #12 is common to SB-9, GR-31, GR-32, GR-33, & GR-37.

Baghouse #15 is common to GR-1 through GR-10, GR-29, GR-30, Grinders ABB & FANUC.

Baghouse #16 is common to SB-5, SB-6, & SB-8, Hose Blast System #8, GR-11, GR-12, GR-13, GR-14, GR-16, & GR-17.
### Grinders

**Installation Date(s):** Prior to 1977

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Limited Emission Factor (lb/ton)</th>
<th>Limited PTE (ton/yr)</th>
<th>326 IAC 6-3-2 Limited PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM</td>
<td>17</td>
<td>8339.5</td>
<td>0.5066</td>
<td>28.56</td>
<td>96.8</td>
</tr>
<tr>
<td>PM$_{10}$</td>
<td>1.7</td>
<td>834.0</td>
<td>0.5066</td>
<td>28.56</td>
<td></td>
</tr>
<tr>
<td>PM$_{2.5}$</td>
<td>1.7</td>
<td>834.0</td>
<td>0.5066</td>
<td>28.56</td>
<td></td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td></td>
<td></td>
<td>0.0045</td>
<td>0.25</td>
<td></td>
</tr>
</tbody>
</table>

Nominal Throughput | Annual Throughput

| ABB Robot Grinder | 1.0 ton/hr | 8,760 ton/yr |
| FANUC Robot Grinder | 1.5 ton/hr | 13,140 ton/yr |
| **Total**         |            | **21,900 ton/yr** |

#### Calculation Methodology

The annual metal limit and emission factors for the Grinders were derived from SSM 085-14027-00003, issued on February 22, 2002. ABB & FANUC from WebFIRE.

Emission Factors for limited emissions were provided by Dalton Foundry.

Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton

Limited PTE (ton/yr) = No. of like units x Limited Capacity (ton finished metal/yr) x [ Emission Factor (lb/ton finished metal) / Total No. of units ] x 8760 x 1 ton/2000 lb

Controlled Emissions (tons/yr) = (Uncontrolled Emissions x (Limited Throughput / Maximum Throughput)) x Capture Efficiency x (1 - Control Efficiency)

All Grinders are controlled by Baghouses.

Baghouse #6 is common to SB-7, GR-19, GR-20, GR-23, GR-25, GR-26, GR-34, GR-35, & GR-36.

Baghouse #12 is common to SB-9, GR-31, GR-32, GR-33, & GR-37.

Baghouse #15 is common to GR-1 through GR-4, GR-9, GR-10, GR-29, GR-30, Grinders ABB & FANUC

Baghouse #16 is common to SB-5, SB-6, & SB-8, Hose Blast System #6, GR-11, GR-12, GR-13, GR-14, GR-16, & GR-17.
## Appendix A: Emissions Calculations

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

### Two (2) MAUS Automatic Grinders

**Installation Date(s):** Approved in 2017

| Total Maximum Capacity: | 52,560 tons per year of finished metal throughput |
| Total Hourly Capacity: | 6.0 tons per hour of finished metal |
| Total Number of Grinders: | 2 |
| Limited Capacity: | 21,000 tons per year of finished metal |

#### Emissions

<table>
<thead>
<tr>
<th>Emissions</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>WebFIRE Emission Factor (lb/ton)</td>
<td>17</td>
<td>1.70</td>
<td>1.70</td>
<td>0.058</td>
</tr>
<tr>
<td>Uncontrolled PTE (lb/hr)</td>
<td>102.00</td>
<td>10.20</td>
<td>10.20</td>
<td>0.35</td>
</tr>
<tr>
<td>Uncontrolled PTE (ton/yr)</td>
<td>446.76</td>
<td>44.68</td>
<td>44.68</td>
<td>1.52</td>
</tr>
<tr>
<td>Capture Efficiency (%)</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
<td>99%</td>
</tr>
<tr>
<td>Uncontrolled Stack PTE (tons/yr)</td>
<td>442.29</td>
<td>44.23</td>
<td>44.23</td>
<td>1.51</td>
</tr>
<tr>
<td>Uncontrolled/Uncaptured Emissions PTE (tons/yr)</td>
<td>4.47</td>
<td>0.45</td>
<td>0.45</td>
<td>0.02</td>
</tr>
<tr>
<td>Limited Uncaptured and Uncontrolled Emissions (tons/yr)</td>
<td>1.79</td>
<td>0.18</td>
<td>0.18</td>
<td>0.01</td>
</tr>
<tr>
<td>Control Efficiency (%)</td>
<td>90%</td>
<td>75%</td>
<td>45%</td>
<td>35%</td>
</tr>
<tr>
<td>Controlled PTE (ton/yr)</td>
<td>44.23</td>
<td>11.06</td>
<td>24.33</td>
<td>0.98</td>
</tr>
<tr>
<td>Limited Emissions After Control (ton/yr)</td>
<td>17.67</td>
<td>4.42</td>
<td>9.72</td>
<td>0.39</td>
</tr>
<tr>
<td>PSD Minor Limits - After Control (lb/ton)</td>
<td>1.68</td>
<td>0.42</td>
<td>0.93</td>
<td>0.04</td>
</tr>
</tbody>
</table>

#### Calculation Methodology

**326 IAC 6-3-2 Allowable Particulate Emissions**

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>P (ton/hr)</th>
<th>E (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAUS Grinder</td>
<td>3.00</td>
<td>8.56</td>
</tr>
<tr>
<td>MAUS Grinder</td>
<td>3.00</td>
<td>8.56</td>
</tr>
</tbody>
</table>

- **Pb = Lead**
- PM and PM10 Emission Factors from FIRE 3-04-003-40. Assumes PM2.5 = PM10. Pb emissions are based on an estimate by the source.
- Capture and control efficiencies provided by source. In addition, PSD minor limits were proposed by the source.
- Uncontrolled PTE (lb/hr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal)
- Uncontrolled PTE (ton/yr) = No. of like units x Max Capacity (ton finished metal/hour) x Emission Factor (lb/ton finished metal) x 8760 hr/yr / 2000 lb/ton
- Uncontrolled Stack PTE (tons/yr) = Uncontrolled PTE (tons/yr) x Capture Efficiency (%)
- Uncontrolled/Uncaptured Emissions PTE (tons/yr) = Uncontrolled PTE (tons/yr) x (1 - Capture Efficiency (%))
- Controlled PTE (tons/yr) = Uncontrolled Emissions x Capture Efficiency x (1 - Control Efficiency)
- Limited Uncaptured and Uncontrolled Emissions (tons/yr) = Limited throughput (tons/yr) x Emission Factor (lb/ton finished metal) / 2,000 (lb/ton) x (1 - Capture Efficiency (%))
- Limited Emissions After Control (ton/yr) = Limited Capacity (ton finished metal/yr) x PSD Minor Limits - After Control (lb/ton) x 1/2,000 (ton/lb)
- PSD Minor Limits - After Control (lb/ton) = WebFIRE Emission Factor (lb/ton of finished metal) x Capture Efficiency (%) x (1 - Control Efficiency (%))
### Paint Dip Tank

**Installation Date(s):** Prior to 1977

<table>
<thead>
<tr>
<th>Material</th>
<th>Density (lb/gal)</th>
<th>Weight % Volatile (H₂O &amp; Organics) (%)</th>
<th>Weight % Organics (%)</th>
<th>Weight % Water (%)</th>
<th>Volume % Water (%)</th>
<th>Volume % Solids (%)</th>
<th>Material Usage (gal/unit)</th>
<th>Max. Production (unit/hr)</th>
<th>VOC Content less H₂O (lb/gal)</th>
<th>VOC Content (lb/gal)</th>
<th>Potential VOC Pounds per Hour (lb/gal)</th>
<th>Potential VOC Pounds per Day (lb/gal)</th>
<th>Potential VOC Tons per Year (ton/yr)</th>
<th>Transfer Efficiency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Water-Reducible Primer (N-5570N)</td>
<td>11.68</td>
<td>43%</td>
<td>37%</td>
<td>7%</td>
<td>52%</td>
<td>37%</td>
<td>0.052</td>
<td>125</td>
<td>1.60</td>
<td>0.77</td>
<td>21.97</td>
<td>0.00</td>
<td>2.07</td>
<td>100%</td>
</tr>
<tr>
<td>Butyl Cellusolve (T-76)</td>
<td>7.51</td>
<td>100%</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
<td>0.052</td>
<td>125</td>
<td>7.51</td>
<td>7.51</td>
<td>213.70</td>
<td>0.00</td>
<td>0.00</td>
<td>0%</td>
</tr>
</tbody>
</table>

**Calculation Methodology**

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Potential PM (ton/yr) = (units/hr) * (gal/unit) * (lbs/gal) * (1-Weight % Volatiles) * (1-Transfer efficiency) * (8760 hrs/yr) * (1 ton/2000 lbs)

Total = Worst Coating + Sum of all solvents used
### Phenolic Urethane Core Making Lines (91, 92, 93, 94, 95, & 96)

#### Installation Dates: pre 1977 - 1998

<table>
<thead>
<tr>
<th>Material</th>
<th>Particulate (PM/PM10/PM2.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mixers Resin</td>
</tr>
<tr>
<td></td>
<td>Core Box Cleaner</td>
</tr>
<tr>
<td></td>
<td>Core Wash</td>
</tr>
<tr>
<td></td>
<td>Amines Catalyst</td>
</tr>
<tr>
<td></td>
<td>Release Agent</td>
</tr>
<tr>
<td></td>
<td>Mixers Resin</td>
</tr>
<tr>
<td></td>
<td>Core Box Cleaner</td>
</tr>
<tr>
<td></td>
<td>Core Wash</td>
</tr>
<tr>
<td></td>
<td>Amines Catalyst</td>
</tr>
<tr>
<td></td>
<td>Release Agent</td>
</tr>
<tr>
<td></td>
<td>Mixers Resin</td>
</tr>
<tr>
<td></td>
<td>Core Box Cleaner</td>
</tr>
<tr>
<td></td>
<td>Core Wash</td>
</tr>
<tr>
<td></td>
<td>Amines Catalyst</td>
</tr>
<tr>
<td></td>
<td>Release Agent</td>
</tr>
</tbody>
</table>

#### Material Usage (gal/yr)

Material Usage for resin (gal/yr) = Sum of Mixer and core machine limited & controlled PTE (ton/yr) x 2,000 lb/ton x Resin addition lb/ton sand x 1 / sum of mixer and core machine emission factor (lb VOC / ton sand).

Percent Volatile for Resin

Note: The amount of VOCs from the resin is an emitted amount after the chemical reaction of the two parts. Since the majority of the VOC content of the resins is reacted a different amount of VOC is emitted compared to the unreacted resin.

#### Acid Scrubber AF

Acid Scrubber AF is common to:

- All PM emissions are also HAP-Metals emissions.
- Particulate emissions are captured and controlled by a Cyclone prior to entering Acid Scrubber.

#### Baghouse Z

Baghouse Z is common to:

- Phenolic Urethane Core Sand Hoppers #3 and #4, Phenolic Urethane electric Sand Heaters #3 and #4, and Air Set Core Sand Hopper #3.

#### Source Name

Dalton Corporation - Warsaw Manufacturing Facility

#### Source Location

1900 East Jefferson Street, Warsaw, Indiana 46580

#### Permit Reviewer

Rithika Reddy

#### Significant Source Modification No.

085-39431-0003

#### Significant Permit Modification No.

085-39391-00003

#### TSD Appendix A Page 21 of 31
### Core Sand Heater Modification - Phenolic Core Making Line #1

A larger sand heater will be installed for the mixer allowing a larger amount of sand to be processed through the mixer on an hourly basis.

<table>
<thead>
<tr>
<th>Core Box Cleaner</th>
<th>Amines Catalyst</th>
<th>Mixers Resin</th>
<th>Core Wash</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTE - Regulated Pollutants (ton/yr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM Control Device</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Methodology

- Phenolic core resin is a mixture of various chemical compounds, including Phenol and Methane Dimethyl Ether (MDI), which are added to the sand mixture. The reaction rate of the Phenol and MDI is 99.99%, meaning 0.01% of the MDI remains in the core.
- The emissions from the core machines are calculated based on the emission factor (lb/ton sand) and the resin throughput (lb resin/ton sand). The reaction rate is considered in the calculation.
- The emissions from the core boxes are calculated based on the emission factor (lb/ton sand) and the resin throughput (lb resin/ton sand). The capture and control efficiencies are applied.

#### Additional Notes

- The emissions from the Phenolic Core Machines are calculated using the emission factors and the resin throughput. The capture and control efficiencies are applied to the emissions.
- The emissions from the Phenolic Core Machine HAPs are provided by the source and based upon analysis of the core sand for TRI purposes.
- The VOC emission factors are based on the PSD and 326 IAC 8-1-6 BACT limits in Condition D.8.1 of the Part 70 Operating Permit for Dalton Foundry, No. T085-39391-00003, issued May 9, 2007.

---

### Emission Data

<table>
<thead>
<tr>
<th>Core Box Cleaner</th>
<th>Amines Catalyst</th>
<th>Mixers Resin</th>
<th>Core Wash</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTE - Regulated Pollutants (ton/yr)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM Control Device</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Methodology

- The emission factors for the Phenolic Core Machines are calculated based on the PSD and 326 IAC 8-1-6 BACT limits in Condition D.8.1 of the Part 70 Operating Permit for Dalton Foundry, No. T085-39391-00003, issued May 9, 2007.
- The capture and control efficiencies are applied to the emissions.
- The emissions from the Core Boxes are calculated based on the emission factor (lb/ton sand) and the resin throughput (lb resin/ton sand). The capture and control efficiencies are applied.

#### Additional Notes

- The emissions from the Phenolic Core Machines are calculated using the emission factors and the resin throughput. The capture and control efficiencies are applied to the emissions.
- The emissions from the Phenolic Core Machine HAPs are provided by the source and based upon analysis of the core sand for TRI purposes.
- The VOC emission factors are based on the PSD and 326 IAC 8-1-6 BACT limits in Condition D.8.1 of the Part 70 Operating Permit for Dalton Foundry, No. T085-39391-00003, issued May 9, 2007.
Phenolic Urethane Core Making Line #9

Maximum Capacity:

- 18 tons per hour of sand
- 41.04 pounds per hour of resin
- 2.75 pound of catalyst per ton of core sand
- 20,408 pound of core wash per ton of core sand
- 18 tons per hour of cores

Usage Limits:

- 315,360,000 pounds per year of sand
- 359,510 pounds per year of resin
- 245,505 pounds per year of core wash
- 1,397 pounds per year of release agent
- 1,725 pounds per year of core box cleaner

Material Pollutant Uncontrolled Emission Factors (lb/ton) Controlled Emission Factors PM=lb/ton sand, PM10=lb/ton sand, VOC=lb/lb material Uncontrolled PTE (ton/yr) Limited PTE (ton/yr)

<table>
<thead>
<tr>
<th>Material</th>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Controlled Emission Factors PM=lb/ton sand, PM10=lb/ton sand, VOC=lb/lb material</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Limited PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixers</td>
<td>PM</td>
<td>3.6</td>
<td>0.33</td>
<td>283.82</td>
<td>1.98</td>
</tr>
<tr>
<td>Mixers</td>
<td>PM10</td>
<td>0.54</td>
<td>0.065</td>
<td>42.57</td>
<td>0.39</td>
</tr>
<tr>
<td>Resin</td>
<td>Noncatalyst VOC</td>
<td>0.02904</td>
<td>0.02904</td>
<td>5.22</td>
<td>4.28</td>
</tr>
<tr>
<td>Catalyst</td>
<td>VOC</td>
<td>1.0</td>
<td>216.81</td>
<td>16.47</td>
<td></td>
</tr>
<tr>
<td>Core Wash</td>
<td>VOC</td>
<td>0.02</td>
<td>2.46</td>
<td>2.46</td>
<td></td>
</tr>
<tr>
<td>Release Agent</td>
<td>VOC</td>
<td>0.9</td>
<td>0.63</td>
<td>0.63</td>
<td></td>
</tr>
<tr>
<td>Core Box Cleaner</td>
<td>VOC</td>
<td>1.0</td>
<td>0.86</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>Mixers</td>
<td>HAP-Metals</td>
<td>0.3</td>
<td>26.02</td>
<td>1.98</td>
<td></td>
</tr>
</tbody>
</table>

Total VOC Emissions: 226.0 24.7

326 IAC 6-3-2 Particulate Emission Rate Limitation

\[ E = \frac{55 \times P^{0.11} - 40}{18} \]

\[ E \text{ (lb/hr)} = 35.6 \]

Calculation Methodology

The annual limits and emission factors for the Large Core Production Cell were derived from SSM 085-21851-00003, issued on October 6, 2006. All PM emissions are also HAP-Metals emissions.
## Appendix A: Emissions Calculations

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

### Shell Core Making Process

**Installation Date(s):** Prior to 1977

<table>
<thead>
<tr>
<th>Material</th>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Percent Volatile (%)</th>
<th>Specific Gravity</th>
<th>VOC Content (lb/gal)</th>
<th>Material Usage (gal/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Wash</td>
<td>VOC</td>
<td>0.200</td>
<td>0.70</td>
<td>1%</td>
<td>1.38</td>
<td>0.12</td>
<td>12,178</td>
</tr>
<tr>
<td>Core Machine Resin</td>
<td>VOC</td>
<td>0.541</td>
<td>1.90</td>
<td>100%</td>
<td>1.16</td>
<td>9.67</td>
<td>392</td>
</tr>
<tr>
<td>Catalysts</td>
<td>VOC</td>
<td>2.750</td>
<td>9.64</td>
<td>100%</td>
<td>0.72</td>
<td>5.97</td>
<td>3,230</td>
</tr>
<tr>
<td>Core Box Cleaner</td>
<td>VOC</td>
<td>0.144</td>
<td>0.50</td>
<td>100%</td>
<td>0.98</td>
<td>8.17</td>
<td>123</td>
</tr>
<tr>
<td>Release Agent</td>
<td>VOC</td>
<td>0.105</td>
<td>0.37</td>
<td>90%</td>
<td>0.82</td>
<td>6.15</td>
<td>120</td>
</tr>
</tbody>
</table>

**Maximum Capacity:** 7,008 tons / year of sand  
0.8 tons per hour of sand

**Total VOC Emissions:** 13.10

**Particulate Emissions:** (PM/PM<sub>10</sub>/PM<sub>2.5</sub>)

<table>
<thead>
<tr>
<th>Air Flowrate (acfm)</th>
<th>Grain Loading (gr/ascf)</th>
<th>PM/PM&lt;sub&gt;10&lt;/sub&gt;/PM&lt;sub&gt;2.5&lt;/sub&gt; Uncontrolled PTE (ton/yr)</th>
<th>HAP (Metals) Uncontrolled PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,000</td>
<td>0.02</td>
<td>11.26</td>
<td>11.26</td>
</tr>
</tbody>
</table>

**326 IAC 6-3-2 Particulate Emission Rate Limitation**

\[
E = 4.10 P^{0.67} \quad \text{ton/yr}
\]

<table>
<thead>
<tr>
<th>Calculation Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 8760 / 2000</td>
</tr>
<tr>
<td>Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb</td>
</tr>
<tr>
<td>Particulate emissions from the shell core making process are uncontrolled.</td>
</tr>
</tbody>
</table>
Appendix A: Emissions Calculations
Source Name: Dalton Corporation - Warsaw Manufacturing Facility
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580
Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Air Set Core Making Process

Installation Date(s): Prior to 1977

<table>
<thead>
<tr>
<th>Material</th>
<th>Pollutant</th>
<th>Emission Factors (lb/ton)</th>
<th>Uncontrolled PTE (ton/yr)</th>
<th>Percent Volatile (%)</th>
<th>Specific Gravity</th>
<th>VOC Content (lb/gal)</th>
<th>Material Usage (gal/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Wash</td>
<td>VOC</td>
<td>0.200</td>
<td>5.26</td>
<td>1%</td>
<td>1.38</td>
<td>0.12</td>
<td>91,336</td>
</tr>
<tr>
<td>Core Machine Resin</td>
<td>VOC</td>
<td>0.541</td>
<td>14.22</td>
<td>100%</td>
<td>1.16</td>
<td>9.67</td>
<td>2,993</td>
</tr>
<tr>
<td>Catalysts</td>
<td>VOC</td>
<td>2.750</td>
<td>72.27</td>
<td>100%</td>
<td>0.72</td>
<td>5.97</td>
<td>24,222</td>
</tr>
<tr>
<td>Core Box Cleaner</td>
<td>VOC</td>
<td>0.144</td>
<td>3.78</td>
<td>100%</td>
<td>0.98</td>
<td>8.17</td>
<td>926</td>
</tr>
<tr>
<td>Release Agent</td>
<td>VOC</td>
<td>0.105</td>
<td>2.76</td>
<td>90%</td>
<td>0.82</td>
<td>6.15</td>
<td>897</td>
</tr>
<tr>
<td><strong>Total VOC Emissions:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>98.29</strong></td>
<td></td>
</tr>
</tbody>
</table>

Particulate Emissions: (PM/PM$_{10}$/PM$_{2.5}$)

<table>
<thead>
<tr>
<th>Air Flowrate (acfm)</th>
<th>Grain Loading (gr/acfm)</th>
<th>PM Uncontrolled PTE (ton/yr)</th>
<th>HAP (Metals) Uncontrolled PTE (ton/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>15,000</td>
<td>0.02</td>
<td>11.26</td>
<td>11.26</td>
</tr>
</tbody>
</table>

326 IAC 6-3-2 Particulate Emission Rate Limitation

\[ E = 4.10 \times 6.70 \]

<table>
<thead>
<tr>
<th>Source</th>
<th>E (lb/hr)</th>
<th>ton/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Handling</td>
<td>13.6</td>
<td>59.7</td>
</tr>
<tr>
<td>Sand Mixer</td>
<td>13.6</td>
<td>59.7</td>
</tr>
<tr>
<td>Air Set Core Machine #2</td>
<td>13.6</td>
<td>59.7</td>
</tr>
</tbody>
</table>

Calculation Methodology

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 8760 / 2000
All VOC emissions are also HAP emissions of triethylamine (TEA).
Particulate emissions from the air set core making process are controlled by Baghouse U.
All PM emissions are also HAP-Metals emissions.
Baghouse U is common to Phenolic Urethane Core Sand Hoppers #3 and #4, Phenolic Urethane electric Sand Heaters #3 and #4, and Air Set Core Sand Hopper #3.
### Large Core Production Cell

**Maximum Capacity:**
- 30 tons per hour of sand
- 68.52 pounds per hour of resin
- 2.75 pounds of catalyst per ton of core sand
- 20.408 pounds of core wash per ton of core sand
- 30 tons per hour of cores

**Usage Limits:**
- 525,600,000 pounds per year of sand
- 600,235 pounds per year of resin
- 722,700 pounds per year of catalyst
- 5,363,222 pounds per year of core wash
- 1,397 pounds per year of release agent

### Material Pollutant

<table>
<thead>
<tr>
<th>Material</th>
<th>Pollutant</th>
<th>Uncontrolled Emission Factors (lb/ton)</th>
<th>Controlled Emission Factors PM=lb/ton sand, VOC=lb/lb material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixers</td>
<td>PM</td>
<td>3.6</td>
<td>Uncontrolled PTE (ton/yr)</td>
</tr>
<tr>
<td>Mixers</td>
<td>PM&lt;sub&gt;10&lt;/sub&gt;</td>
<td>0.54</td>
<td>473.04</td>
</tr>
<tr>
<td>Catalyst</td>
<td>VOC</td>
<td>1.0</td>
<td>0.33</td>
</tr>
<tr>
<td>Core Wash</td>
<td>VOC</td>
<td>0.02</td>
<td>361.35</td>
</tr>
<tr>
<td>Release Agent</td>
<td>VOC</td>
<td>0.02</td>
<td>53.63</td>
</tr>
<tr>
<td>Core Box Cleaner</td>
<td>VOC</td>
<td>0.02</td>
<td>3.25</td>
</tr>
<tr>
<td>Mixers</td>
<td>HAP: Metals</td>
<td>0.33</td>
<td>43.36</td>
</tr>
</tbody>
</table>

**Total VOC Emissions:**
- 427.81
- 24.76

### 326 IAC 6-3-2 Particulate Emission Rate Limitation

- Sand Handling: P (ton/yr) = 30
- E<sub>0</sub> = 55 P<sup>0.11</sup> - 40
- E<sub>0</sub> (lb/hr)= 40
- 175.0

### Calculation Methodology

The annual limits and emission factors for the Large Core Production Cell were derived from SSM 085-21851-00003, issued on October 6, 2006.

Uncontrolled PTE (ton/yr) = Max Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 8760 / 2000

PM Limited PTE (ton/yr) = Limited Capacity (ton sand/yr) x Emission Factor (lb/ton sand) x 1 ton/2000 lb

PM emissions are also HAP-Metals emissions.

 PARTICULATE EMISSION FROM THE ENCLODED PNEUMATIC SAND TRANSPORTER ARE CONTROLLED BY BAGHOUSE V.

The Baghouse V is common to Large Core Sand Holding Hopper, and Large Core Sand Weigh Hopper.

VOC Limited PTE (ton/yr) = Limited Capacity (b material/yr) x Emission Factor (lb VOC/b material) x 1 ton/2000 lb

Acid Scrubber AF is common to:
- Phenolic Urethane Core Machines #1 and #2,
- Phenolic Urethane Core Machines #4 and #5,
- Phenolic Urethane Core Machines #7 through #19,
- Phenolic Urethane Core Machines #21 and #22,
- Phenolic Urethane Core Machine #25,
- Phenolic Urethane Core Machines #27 and #28, and
- Cold Box Phenolic Urethane Core Machines #29 and #30.
### Natural Gas Combustion

#### Phenolic Urethane Core Making Lines

<table>
<thead>
<tr>
<th>Line #</th>
<th>Capacity (MMBtu/hr)</th>
<th>Potential Throughput (MMCF/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Oven #9</td>
<td>6.0</td>
<td>52.6</td>
</tr>
<tr>
<td>Core Oven #10</td>
<td>3.0</td>
<td>26.3</td>
</tr>
</tbody>
</table>

#### Phenolic Urethane Sand Heaters

<table>
<thead>
<tr>
<th>Heater #</th>
<th>Capacity (MMCF/yr)</th>
<th>Potential Throughput (MMCF/yr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHUH #5</td>
<td>0.192</td>
<td>511.5</td>
</tr>
</tbody>
</table>

#### Large Core Production Cells

<table>
<thead>
<tr>
<th>Cell #</th>
<th>Hot Blast Preheater</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Phenolic Urethane Core Oven #29</td>
</tr>
</tbody>
</table>

#### Particulate Matter (PM) Emission Rate

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMCF</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM10</td>
<td>1.9</td>
<td>7.6</td>
</tr>
<tr>
<td>PM2.5</td>
<td>7.6</td>
<td>7.6</td>
</tr>
<tr>
<td>SO2</td>
<td>0.6</td>
<td>100</td>
</tr>
<tr>
<td>NOX</td>
<td>1.8</td>
<td>84.0</td>
</tr>
<tr>
<td>CO</td>
<td>1.0</td>
<td>100</td>
</tr>
</tbody>
</table>

#### Benzene

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMCF</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benzene</td>
<td>2.1E-03</td>
<td>1.2E-03</td>
</tr>
</tbody>
</table>

#### Dichlorobenzene

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMCF</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBz</td>
<td>1.2E-03</td>
<td>7.5E-02</td>
</tr>
</tbody>
</table>

#### Formaldehyde

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMCF</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCHO</td>
<td>1.8E+00</td>
<td>3.4E-03</td>
</tr>
</tbody>
</table>

#### Hexane

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMCF</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexane</td>
<td>7.5E-02</td>
<td>1.9E-01</td>
</tr>
</tbody>
</table>

#### Toluene

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Emission Factor in lb/MMCF</th>
<th>Potential Emission in tons/yr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>3.4E-03</td>
<td>1.0E-03</td>
</tr>
</tbody>
</table>

#### Calculation Methodology

- All emission factors are based on normal firing.
- MMBtu = 1,000,000 Btu
- MMCF = 1,000,000 Cubic Feet of Gas
- Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
- Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF) / 2,000 lb/ton

#### Greenhouse Gas Emissions

<table>
<thead>
<tr>
<th>Greenhouse Gas</th>
<th>Emission Factor in lb/MMCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO2e</td>
<td>44.00</td>
</tr>
</tbody>
</table>

#### Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

- CO2 GWP = 1
- CH4 GWP = 21
- N2O GWP = 298

#### Calculation Methodology

- CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (21) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (298)
Appendix A: Emissions Calculations

Source Name: Dalton Corporation - Warsaw Manufacturing Facility
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580

Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Reciprocating Internal Combustion Engines - Diesel Fuel
Output Rating (<=600 HP)

<table>
<thead>
<tr>
<th>Output Horsepower Rating (hp)</th>
<th>170.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Hours Operated per Year</td>
<td>500</td>
</tr>
<tr>
<td>Potential Throughput (hp-hr/yr)</td>
<td>85,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0022</td>
<td>0.0021</td>
<td>0.0310</td>
<td>0.0025</td>
<td>0.0067</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>0.09</td>
<td>1.32</td>
<td>0.11</td>
<td>0.28</td>
</tr>
</tbody>
</table>

*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

- **HAPs = Polycyclic Organic Matter (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)**

### Hazardous Air Pollutants (HAPs)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Benzene</th>
<th>Toluene</th>
<th>Xylene</th>
<th>1,3-Butadiene</th>
<th>Formaldehyde</th>
<th>Acetaldehyde</th>
<th>Acrolein</th>
<th>Total PAH HAPs***</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr****</td>
<td>6.53E-06</td>
<td>2.86E-06</td>
<td>2.00E-06</td>
<td>2.74E-07</td>
<td>8.26E-06</td>
<td>5.37E-06</td>
<td>6.48E-07</td>
<td>1.18E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>2.78E-04</td>
<td>1.22E-04</td>
<td>8.48E-05</td>
<td>1.16E-05</td>
<td>3.51E-04</td>
<td>2.28E-04</td>
<td>2.75E-05</td>
<td>5.00E-05</td>
</tr>
</tbody>
</table>

***PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

****Emission factors in lb/hp-hr were calculated using emission factors in lb/MMBtu and a brake specific fuel consumption of 7,000 Btu / hp-hr (AP-42 Table 3.3-1).

| Potential Emission of Total HAPs (tons/yr) | 1.15E-03 |
Appendix A: Emissions Calculations
Source Name: Dalton Corporation - Warsaw Manufacturing Facility
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580
Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Spark Ignition Internal Combustion Engines - Gasoline Fuel
Output Rating (<=600 HP)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>PM*</th>
<th>PM10*</th>
<th>direct PM2.5*</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>7.21E-04</td>
<td>7.21E-04</td>
<td>7.21E-04</td>
<td>5.91E-04</td>
<td>0.011</td>
<td>0.0216</td>
<td>0.007</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
<td>0.12</td>
<td>2.22</td>
<td>4.35</td>
<td>1.40</td>
</tr>
</tbody>
</table>
*PM and PM2.5 emission factors are assumed to be equivalent to PM10 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

Green House Gas Emissions (GHG)

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>CO2</th>
<th>CH4</th>
<th>N2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emission Factor in lb/hp-hr</td>
<td>1.08</td>
<td>4.63E-05</td>
<td>9.26E-06</td>
</tr>
<tr>
<td>Potential Emission in tons/yr</td>
<td>217.60</td>
<td>9.33E-03</td>
<td>1.87E-03</td>
</tr>
</tbody>
</table>

Summed Potential Emissions in tons/yr 217.61
CO2e Total in tons/yr 218.37

Methodology
Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-1
CH4 and N2O Emission Factor from 40 CFR 98 Subpart C Table C-2.
Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential Throughput (hp-hr/yr) = [Output Horsepower Rating (hp)] * [Maximum Hours Operated per Year]
Potential Emission (tons/yr) = [Potential Throughput (hp-hr/yr)] * [Emission Factor (lb/hp-hr)] / [2,000 lb/ton]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N2O GWP (310).
### Source Name:
Dalton Corporation - Warsaw Manufacturing Facility

### Source Location:
1900 East Jefferson Street, Warsaw, Indiana 46580

### Significant Source Modification No.:
085-39391-00003

### Significant Permit Modification No.:
085-39431-0003

### Permit Reviewer:
Rihika Reddy

---

<table>
<thead>
<tr>
<th>Section</th>
<th>Emission Unit / Process</th>
<th>Installation Date(s)</th>
<th>Included Emission Units</th>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.1</td>
<td>Cupola Charge Handling</td>
<td>Prior to 1977</td>
<td></td>
<td>NONE</td>
</tr>
<tr>
<td>D.2</td>
<td>Cupola Melt Furnace</td>
<td>Prior to 1977</td>
<td></td>
<td>Wet Scrubber A, Baghouse #14</td>
</tr>
<tr>
<td>D.3</td>
<td>Herman 2 Mold Line</td>
<td>Prior to 1977</td>
<td>Pouring, casting/cooling, shakeout &amp; sand handling</td>
<td>Wet Collectors #3 (so)</td>
</tr>
<tr>
<td>D.4</td>
<td>Herman 3 Mold Line</td>
<td>2009</td>
<td>Baghouse #13</td>
<td></td>
</tr>
<tr>
<td>D.5</td>
<td>Inclined Shakeout and Sort System</td>
<td>Prior to 1977</td>
<td>Baghouse #2</td>
<td></td>
</tr>
<tr>
<td>D.6</td>
<td>Waste Sand Handling, Screening and Transport System</td>
<td>Prior to 1977</td>
<td>Baghouse #9</td>
<td></td>
</tr>
<tr>
<td>D.7</td>
<td>Gravity Shaker</td>
<td>2011</td>
<td>Baghouse #9</td>
<td></td>
</tr>
<tr>
<td>D.8</td>
<td>Shot Blast Machines</td>
<td>Pre 1977 - 2006</td>
<td>BB-1 through BB-11</td>
<td>Baghouses #3, #6, #12, &amp; #16</td>
</tr>
<tr>
<td>D.9</td>
<td>Drinders</td>
<td>Prior to 1977</td>
<td>CH-1 through CH-38</td>
<td>Baghouses #8, #12, #15, &amp; #16</td>
</tr>
<tr>
<td>D.10</td>
<td>Rose Blast System for Shot Blast Machine BB-8</td>
<td>2011</td>
<td>Baghouse #15</td>
<td></td>
</tr>
<tr>
<td>D.11</td>
<td>Shot Blast Machines</td>
<td>2009</td>
<td>Baghouse #15</td>
<td></td>
</tr>
<tr>
<td>D.12</td>
<td>Ducted Drinders and FANUC</td>
<td>Prior to 1977</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.13</td>
<td>SB10 Blowing Silencer</td>
<td>2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D.14</td>
<td>Large Core Production Cell</td>
<td>Prior to 1977</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

* Section corresponds to the Section Ds of the Part 70 Permit.

- so = shakeout
- sh = sand handling
- CO = core oven
- ECO = electric core oven
- ASCM = air set core machine
- SCM = shell core machine
- SM = sand mixer
- NH = natural gas heater
- CWDT = core wash dip tank
- CM = core machine
- CM = core machine
- SH = sand hopper

---

### Sources Included in Emission Calculations

<table>
<thead>
<tr>
<th>Source Name</th>
<th>Source Location</th>
<th>Permit Reviewer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Rihika Reddy</td>
</tr>
</tbody>
</table>
## Annual Enforceable Limits

<table>
<thead>
<tr>
<th>Emission Unit / Process</th>
<th>Annual Limitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cupola Charge Handling</td>
<td>199,194 tons per year of metal charged</td>
</tr>
<tr>
<td>Cupola Melt Furnace</td>
<td>187,919 tons per year of melted metal</td>
</tr>
<tr>
<td>Herman 2 and Herman 3 Sand Handling</td>
<td>1,127,516 tons per year of core and mold sand handled</td>
</tr>
<tr>
<td>Herman 2 Sand Handling - Klein Transport</td>
<td>106,000 tons per year of core and mold sand handled</td>
</tr>
<tr>
<td>Herman 3 Mold Line</td>
<td>90,578 tons per year of metal throughput</td>
</tr>
<tr>
<td>Waste Sand Handling, Screening and Transport System</td>
<td>543,470 tons per year of sand throughput</td>
</tr>
<tr>
<td>Shot Blast Machines</td>
<td>112,752 tons per year of waste sand throughput</td>
</tr>
<tr>
<td>Hose Blast System for Shot Blast Machine SB-8</td>
<td>16,500 tons per year of finished castings</td>
</tr>
<tr>
<td>SB-9</td>
<td>60,500 tons per year of finished castings</td>
</tr>
<tr>
<td>Robotic Grinders ABB and FANUC</td>
<td>15,500 tons per year of finished castings</td>
</tr>
<tr>
<td>MAUS Automatic Grinders</td>
<td>21,000 tons per year of finished castings</td>
</tr>
<tr>
<td>SB10 Blow-off Chamber</td>
<td>20,000 tons per year of finished castings</td>
</tr>
<tr>
<td>Vibratory Shaker</td>
<td>142,000 tons per year of metal throughput</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #9</td>
<td>295,000 pounds per year of resin usage</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #1</td>
<td>32,935 gallons per year of catalyst usage</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #2</td>
<td>12,000 tons per year of sand</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #3</td>
<td>17,922 tons per year of sand</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #4</td>
<td>4,656 tons per year of sand</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #5</td>
<td>23,200 tons per year of sand</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Line #8</td>
<td>12,910 tons per year of sand</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Lines</td>
<td>2,383 tons per year of sand</td>
</tr>
<tr>
<td>Phenolic Urethane Core Making Lines</td>
<td>6,350 tons per year of sand</td>
</tr>
<tr>
<td>Large Core Production Cell</td>
<td>177,260 gallons per year of core wash</td>
</tr>
<tr>
<td></td>
<td>1,150 gallons per year of release agent</td>
</tr>
<tr>
<td></td>
<td>1,188 gallons per year of core box cleaner</td>
</tr>
<tr>
<td></td>
<td>12,005 tons per year of sand</td>
</tr>
<tr>
<td></td>
<td>299,399 pounds per year of resin</td>
</tr>
<tr>
<td></td>
<td>245,505 pounds per year of core wash</td>
</tr>
<tr>
<td></td>
<td>1,397 pounds per year of release agent</td>
</tr>
<tr>
<td></td>
<td>1,725 pounds per year of core box cleaner</td>
</tr>
</tbody>
</table>
## Appendix B: Emissions Calculations for Re-allocation

### Dalton Corporation - Warsaw Manufacturing Facility

**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580

**Significant Source Modification No.:** 085-39391-00003

**Significant Permit Modification No.:** 085-39431-0003

**Permit Reviewer:** Rithika Reddy

### Dalton Warsaw Re-Allocation Projects

<table>
<thead>
<tr>
<th>Pollutant: VOC</th>
<th>Throughput</th>
<th>Emission Rate</th>
<th>VOC Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melt Metal Throughput Limit</td>
<td>187,919 metal</td>
<td>0.163</td>
<td>30.34</td>
</tr>
<tr>
<td>Herman 2 Pouring</td>
<td>187,919 metal</td>
<td>0.687</td>
<td>129.68</td>
</tr>
<tr>
<td>Herman 2 Casting Cooling</td>
<td>187,919 metal</td>
<td>0.687</td>
<td>129.68</td>
</tr>
<tr>
<td>Herman 2 Shakeout</td>
<td>1,315,435 metal + sand</td>
<td>0.115</td>
<td>149.99</td>
</tr>
</tbody>
</table>

### Methodology:

For Cupola Melt Furnace, Herman 2 Pouring, and Herman 2 Casting Cooling:

VOC (tons/yr) = Metal Throughput Limit (tons/yr) x Emission Rate (lb VOC/ton metal)/2000 lb/ton

For Herman 2 and Herman 3 Sand Handling, and Herman 2 Shakeout:

VOC (tons/yr) = (Metal throughput limit + Sand throughput limit) x Emission Rate (lb VOC /ton of metal and sand) /2000 lb/ton
## Pollutant: PM

<table>
<thead>
<tr>
<th>Source Name: Dalton Corporation - Warsaw Manufacturing Facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580</td>
</tr>
<tr>
<td>Significant Source Modification No.: 085-39391-00003</td>
</tr>
<tr>
<td>Significant Permit Modification No.: 085-39431-0003</td>
</tr>
<tr>
<td>Permit Reviewer: Rithika Reddy</td>
</tr>
</tbody>
</table>

### Dalton Warsaw Re-Allocation Projects

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Throughput</th>
<th>Emission Rate</th>
<th>PM Emissions</th>
<th>Proposed Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Throughput</td>
<td>Emission Rate</td>
<td>PM Emissions</td>
<td>Throughput</td>
</tr>
<tr>
<td>Metal Throughput limit</td>
<td>187,919 metal</td>
<td>0.821</td>
<td>77.14</td>
<td>152,078 metal</td>
</tr>
<tr>
<td>Sand throughput limits</td>
<td>1,127,516 sand</td>
<td>0.034</td>
<td>22.36</td>
<td>1,064,548 sand</td>
</tr>
</tbody>
</table>

### Methodology:

- **For Cupola, Herman 2 Pouring, and Herman 2 Casting Cooling:**
  
  \[ PM \text{ (tons/yr)} = \text{Metal Throughput Limit (tons/yr)} \times \text{Emission Rate (lb PM/ton metal)/2000 lb/ton} \]

- **For Herman 2 and Herman 3 Sand Handling, and Herman 2 Shakeout**
  
  \[ PM \text{ (tons/yr)} = \frac{(\text{Metal throughput limit + Sand throughput limit}) \times \text{Emission Rate (lb PM/ton of metal and sand)}/2000 \text{ lb/ton}}{2000 \text{ lb/ton}} \]
## Appendix B: Emissions Calculations for Re-allocation

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

### Dalton Warsaw Re-Allocation Projects

#### Pollutant: PM10

<table>
<thead>
<tr>
<th>Throughput</th>
<th>Emission Rate</th>
<th>PM10 Emissions</th>
<th>Throughput</th>
<th>Emission Rate</th>
<th>PM10 Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal Throughput</td>
<td>187,919 metal</td>
<td>0.738</td>
<td>152,078 metal</td>
<td>0.738</td>
<td>56.12</td>
</tr>
<tr>
<td>Sand Throughput</td>
<td>1,127,516 sand</td>
<td></td>
<td>912,470 sand</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cupola Melt Furnace</td>
<td>187,919 metal</td>
<td>0.738</td>
<td>69.34</td>
<td>0.738</td>
<td>56.12</td>
</tr>
<tr>
<td>Herman 2 and Herman 3 Sand Handling</td>
<td>1,315,435 metal + sand</td>
<td>0.058</td>
<td>38.15</td>
<td>0.058</td>
<td>30.87</td>
</tr>
<tr>
<td>Herman 2 Pouring</td>
<td>187,919 metal</td>
<td>0.052</td>
<td>4.89</td>
<td>0.19</td>
<td>14.45</td>
</tr>
<tr>
<td>Herman 2 Casting Cooling</td>
<td>187,919 metal</td>
<td>0.196</td>
<td>18.42</td>
<td>0.4</td>
<td>30.42</td>
</tr>
<tr>
<td>Herman 2 Shakeout</td>
<td>1,315,435 metal + sand</td>
<td>0.058</td>
<td>38.15</td>
<td>0.058</td>
<td>30.87</td>
</tr>
</tbody>
</table>

**Methodology:**

For Cupola, Herman 2 Pouring, and Herman 2 Casting Cooling:

\[
PM10 \text{ (tons/yr)} = \frac{\text{Metal Throughput Limit (tons/yr)} \times \text{Emission Rate (lb PM10/ton metal)}}{2000 \text{ lb/ton}}
\]

For Herman 2 and Herman 3 Sand Handling, and Herman 2 Shakeout:

\[
PM10 \text{ (tons/yr)} = \frac{(\text{Metal throughput limit} + \text{Sand throughput limit}) \times \text{Emission Rate (lb PM10/ton of metal and sand)}}{2000 \text{ lb/ton}}
\]
Appendix C: ATPA

Source Name: Dalton Corporation - Warsaw Manufacturing Facility
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580
Significant Source Modification No.: 085-39391-00003
Significant Permit Modification No.: 085-39431-0003
Permit Reviewer: Rithika Reddy

Baseline Actual Emissions:
The baseline actual emissions from the existing emission units will be evaluated based on Dalton's average emissions from January 1, 2011 through December 31, 2012.

Emissions Units Involved:
Based on the attached ATPA test, all of the existing equipment will be considered.

Hybrid Test: ATP and ATPA summary
Hybrid Test = ATP (new unit) and ATPA (existing units)
Where:  ATP (new unit) = Limited PTE - C (Table 1)

ATPA (existing units) = Baseline Actual Emissions (Table 2) - Projected Actual Emissions Table 3
+ Could Have Accommodated Emissions/Demand Growth Exclusions (Table 4)
**Appendix C: ATPA**

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

Table 1 - Limited Potential to Emit - New Emission Units (tons/year)

<table>
<thead>
<tr>
<th>Emission Unit</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO2</th>
<th>NOx</th>
<th>VOC</th>
<th>CO</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Core Machines Stack</td>
<td>1.66</td>
<td>0.33</td>
<td>0.33</td>
<td>0</td>
<td>0</td>
<td>11.95</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Core Machines fugitive</td>
<td>0.18</td>
<td>0.03</td>
<td>0.03</td>
<td>0</td>
<td>0</td>
<td>3.19</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>#25 Replacement stack</td>
<td>2.13</td>
<td>0.42</td>
<td>0.42</td>
<td>0</td>
<td>0</td>
<td>3.28</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>#25 Replacement fugitive</td>
<td>0.23</td>
<td>0.03</td>
<td>0.03</td>
<td>0</td>
<td>0</td>
<td>6.37</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Core Ovens stack</td>
<td>0.02</td>
<td>0.09</td>
<td>0.09</td>
<td>0.01</td>
<td>1.14</td>
<td>0.06</td>
<td>0.95</td>
<td>0</td>
</tr>
<tr>
<td>Finishing Stations stack</td>
<td>14.73</td>
<td>3.68</td>
<td>8.10</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0.33</td>
</tr>
<tr>
<td>Finishing Stations fugitive</td>
<td>1.49</td>
<td>0.15</td>
<td>0.15</td>
<td>0</td>
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<td>24.85</td>
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<td>0.33</td>
</tr>
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</table>
### Appendix C: ATPA

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

#### Actual Production/usage

<table>
<thead>
<tr>
<th>Production Unit</th>
<th>2011</th>
<th>2012</th>
<th>Average</th>
<th>Units/year</th>
</tr>
</thead>
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<tr>
<td>Cupola Charge Handling</td>
<td>92160.4</td>
<td>91472.6</td>
<td>91816.5</td>
<td>tons</td>
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<tr>
<td>Cupola Melt Furnace</td>
<td>85544.7</td>
<td>82334.7</td>
<td>83939.7</td>
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</tr>
<tr>
<td>Herman 2 Mold Line - Iron</td>
<td>46099.4</td>
<td>36608.4</td>
<td>41353.9</td>
<td>tons</td>
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<tr>
<td>Herman 2 Mold Line - Sand</td>
<td>360914</td>
<td>281463</td>
<td>321388.5</td>
<td>tons</td>
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<td>Herman 2 and Herman 3 Sand Handling</td>
<td>58059</td>
<td>542807</td>
<td>561683</td>
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<td>Waste Sand Handling - Klein Transport</td>
<td>3245.4</td>
<td>345.22</td>
<td>1795.3</td>
<td>tons</td>
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<td>Herman 3 Mold Line - Iron</td>
<td>38346.3</td>
<td>44918.1</td>
<td>41632.2</td>
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<tr>
<td>Herman 3 Mold Line - Sand</td>
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<td>261344</td>
<td>240498.5</td>
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<tr>
<td>Inclined Shakeout and Sort System</td>
<td>57387.95</td>
<td>49786.25</td>
<td>53587.1</td>
<td>tons</td>
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<tr>
<td>Vibratory Shaker</td>
<td>1688.45</td>
<td>1748.76</td>
<td>1718.6</td>
<td>tons</td>
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<tr>
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<td>50874</td>
<td>28369</td>
<td>39621.5</td>
<td>tons</td>
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<tr>
<td>Shot Blast Machines (2013)</td>
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<td>50791.9</td>
<td>51411.8</td>
<td>tons</td>
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<td>Hose Blast #8</td>
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<td>0</td>
<td>tons</td>
</tr>
<tr>
<td>S-10 Blow-off Chamber</td>
<td>486.35</td>
<td>822.39</td>
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<td>tons</td>
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<td>Grinders</td>
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<td>950.7</td>
<td>tons</td>
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<tr>
<td>Robotic Grinders ABB and FANUC</td>
<td>49813.93</td>
<td>46954.51</td>
<td>48384.2</td>
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<tr>
<td>MAUS Automatic Grinders (2017)</td>
<td>2217.67</td>
<td>3837.39</td>
<td>3027.5</td>
<td>tons</td>
</tr>
<tr>
<td>Paint Dip Tank</td>
<td>1340</td>
<td>0</td>
<td>670</td>
<td>gallons</td>
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<td>Phenolic Urethane Core Making</td>
<td>13908</td>
<td>12399.1</td>
<td>13153.6</td>
<td>tons</td>
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<td>Paint Dip #1</td>
<td>4299.8</td>
<td>2448.5</td>
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<td>Paint Dip #2</td>
<td>4269.3</td>
<td>4594.8</td>
<td>4432.1</td>
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<td>Line # 5</td>
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<td>tons</td>
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<tr>
<td>Line # 5</td>
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<td>1036.9</td>
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<td>Line # 8</td>
<td>5620.3</td>
<td>3919.2</td>
<td>4769.8</td>
<td>tons</td>
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<td>Line # 9 - Sand</td>
<td>3005.42</td>
<td>5456.47</td>
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<td>tons</td>
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<tr>
<td>Line # 9 - Resin</td>
<td>56135.07</td>
<td>98440.05</td>
<td>77287.6</td>
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<td>Line # 9 - Catalyst</td>
<td>4504.5</td>
<td>7025</td>
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<tr>
<td>Shell Core Making Process</td>
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<td>Air Set Core Making Process</td>
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<tr>
<td>Large Core Production Cell - Sand</td>
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<td>2147.9</td>
<td>2397.3</td>
<td>tons</td>
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<td>2392</td>
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<tr>
<td>Large Core Production Cell - Core Wash</td>
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<td>831.5</td>
<td>908.1</td>
<td>pounds</td>
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<tr>
<td>Large Core Production Cell - Release Agent</td>
<td>446.45</td>
<td>466.27</td>
<td>456.4</td>
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</tr>
<tr>
<td>Large Core Production Cell - Core Box Cleaner</td>
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<td>0</td>
<td>pounds</td>
</tr>
<tr>
<td>Combustion</td>
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<td>mm^3/s</td>
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<td>0</td>
<td>hours</td>
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<td>Gasoline Generators</td>
<td>733</td>
<td>253</td>
<td>493</td>
<td>gallons</td>
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</table>

Average = (2011 + 2012)/2
## Appendix C: ATPA

**Source Name:** Dalton Corporation - Warsaw Manufacturing Facility  
**Source Location:** 1900 East Jefferson Street, Warsaw, Indiana 46580  
**Significant Source Modification No.:** 085-39391-00003  
**Significant Permit Modification No.:** 085-39431-0003  
**Permit Reviewer:** Rithika Reddy

### Table 2 - Baseline Actual Emissions of Existing Units (ton/yr)

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<thead>
<tr>
<th>Source</th>
<th>PM</th>
<th>PM$_{10}$</th>
<th>PM$_{2.5}$</th>
<th>SO$_2$</th>
<th>NO$_X$</th>
<th>VOC</th>
<th>CO</th>
<th>CO$_{2e}$</th>
<th>Pb</th>
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<tr>
<td>Cupola Charge Handling</td>
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<td>16.5</td>
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<td>0.1</td>
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<td>0.12</td>
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<td>Robotic Grinders ABB and FANUC</td>
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<tr>
<td>MAUS Automatic Grinders (2017)</td>
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<td>0.00</td>
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<td>Paint Dip Tank</td>
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<td>0.26</td>
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<td>Phenolic Urethane Core Making</td>
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<td></td>
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<td>Line # 1</td>
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<td>0</td>
<td>24.7</td>
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</tr>
<tr>
<td>Shell Core Making Process</td>
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<td>0.0</td>
<td>0</td>
<td>0</td>
<td>0.1</td>
<td>0</td>
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<tr>
<td>Air Set Core Making Process</td>
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<td>0.0</td>
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<td>0</td>
<td>0.1</td>
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</tr>
<tr>
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<td>0.1</td>
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<td>0</td>
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<td>2.96</td>
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<tr>
<td><strong>Total Baseline (tons/yr)</strong></td>
<td>353.67</td>
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<td>279.47</td>
<td>58.42</td>
<td>60.73</td>
<td>421.96</td>
<td>2,307.88</td>
<td>40,110.96</td>
<td>5.52</td>
</tr>
</tbody>
</table>

Baseline actual emissions based on 2011 and 2012 production/usage.
# Appendix C: ATPA

Source Name: Dalton Corporation - Warsaw Manufacturing Facility  
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580  
Significant Source Modification No.: 085-39391-00003  
Significant Permit Modification No.: 085-39431-0003  
Permit Reviewer: Rithika Reddy

## Table 3 - Projected Actual Emissions of Existing Units (ton/yr)

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>PM</th>
<th>PM10</th>
<th>PM2.5</th>
<th>SO2</th>
<th>NOX</th>
<th>VOC</th>
<th>CO</th>
<th>CO2e</th>
<th>Pb</th>
</tr>
</thead>
<tbody>
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<td>608.9</td>
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<td>0</td>
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<td>0</td>
<td></td>
</tr>
<tr>
<td>Vibratory Shaker</td>
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</tr>
<tr>
<td>Waste Sand Handling, Screening and Transport System</td>
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</tr>
<tr>
<td>Shot Blast Machines (S B-1 through S B-9)</td>
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<td>28.6</td>
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### Table 4 - Additional Emissions That Could Have Been Accommodated of Existing Units (ton/yr)

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<td><strong>Total Emissions that could have been accommodated (tons/yr)</strong></td>
<td><strong>389.07</strong></td>
<td><strong>301.88</strong></td>
<td><strong>307.18</strong></td>
<td><strong>70.72</strong></td>
<td><strong>26.87</strong></td>
<td><strong>548.41</strong></td>
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### Table 5 - Actual to Projected Actual (ATPA) of the Existing Emissions Units (ton/yr)

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<td>Total Baseline Emissions (Table 2)</td>
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<td>Total Future Projected Emissions (Table 3)</td>
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<td>585.63</td>
<td>129.06</td>
<td>74.22</td>
<td>969.38</td>
<td>4717.28</td>
<td>12.9</td>
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<tr>
<td>Total Additional Emissions That Could Have Been Accommodated (Table 4)</td>
<td>389.07</td>
<td>301.88</td>
<td>307.18</td>
<td>70.72</td>
<td>26.87</td>
<td>548.41</td>
<td>2,420.65</td>
<td>7.48</td>
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<td>ATPA from Modified Existing Emissions Units</td>
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<td>13.38</td>
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</table>
Appendix C: ATPA

Source Name: Dalton Corporation - Warsaw Manufacturing Facility  
Source Location: 1900 East Jefferson Street, Warsaw, Indiana 46580

Significant Source Modification No.: 085-39391-00003  
Significant Permit Modification No.: 085-39431-0003  
Permit Reviewer: Rithika Reddy

<table>
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<td>ATPA from Existing Emission Units (Table 5)</td>
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<td>1.02</td>
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<td>Total Emissions Increase From Project</td>
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</table>
June 20, 2018

Mr. Michael Schall
Dalton Corporation, Warsaw Manufacturing Facility
1900 East Jefferson Street
Warsaw, IN 46580

Re: Public Notice
Dalton Corporation, Warsaw Manufacturing Facility
Permit Level:
Title V Significant Source Modification and Significant Permit Modification/Revision
Permit Number: 085-39391-00003 and 085-39431-00003

Dear Mr. Schall:

Enclosed is a copy of your draft Title V Significant Source Modification and Significant Permit Modification/Revision, Technical Support Document, emission calculations, and the Public Notice which will be printed in your local newspaper.

The Office of Air Quality (OAQ) has prepared two versions of the Public Notice Document. The abbreviated version will be published in the newspaper, and the more detailed version will be made available on the IDEM’s website and provided to interested parties. Both versions are included for your reference. The OAQ has requested that the Times Union in Warsaw, Indiana publish the abbreviated version of the public notice no later than June 21, 2018. You will not be responsible for collecting any comments, nor are you responsible for having the notice published in the newspaper.

OAQ has submitted the draft permit package to the Warsaw Community Public Library, 310 East Main Street in Warsaw, Indiana. As a reminder, you are obligated by 326 IAC 2-1.1-6(c) to place a copy of the complete permit application at this library no later than ten (10) days after submittal of the application or additional information to our department. We highly recommend that even if you have already placed these materials at the library, that you confirm with the library that these materials are available for review and request that the library keep the materials available for review during the entire permitting process.

Please review the enclosed documents carefully. This is your opportunity to comment on the draft permit and notify the OAQ of any corrections that are needed before the final decision. Questions or comments about the enclosed documents should be directed to Rithika Reddy, Indiana Department of Environmental Management, Office of Air Quality, 100 N. Senate Avenue, Indianapolis, Indiana, 46204 or call (800) 451-6027, and ask for extension 4-9694 or dial (317) 234-9694.

Sincerely,

Vivian Haun
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover Letter 1/9/2017
ATTENTION:  PUBLIC NOTICES, LEGAL ADVERTISING

June 19, 2018

Times Union
PO Box 1448
Warsaw, IN 46581-1448

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Dalton Corporation, Warsaw Manufacturing Facility, Kosciusko County, Indiana.

Since our agency must comply with requirements which call for a Notice of Public Comment, we request that you print this notice one time, no later than June 21, 2018.

Please send a notarized form, clippings showing the date of publication, and the billing to the Indiana Department of Environmental Management, Accounting, Room N1345, 100 North Senate Avenue, Indianapolis, Indiana, 46204.

To ensure proper payment, please reference account # 100174737.

We are required by the Auditor’s Office to request that you place the Federal ID Number on all claims. If you have any conflicts, questions, or problems with the publishing of this notice or if you do not receive complete public notice information for this notice, please call Vivian Haun at 800-451-6027 and ask for extension 3-6878 or dial 317-233-6878.

Sincerely,

Vivian Haun

Vivian Haun
Permit Branch
Office of Air Quality

Permit Level:  Title V Significant Source Modification and Significant Permit Modification/Revision
Permit Number:  085-39391-00003 and 085-39431-00003

Enclosure
PN Newspaper.dot 1/9/2017
June 20, 2018

To: Warsaw Community Public Library

From: Jenny Acker, Branch Chief
Permits Branch
Office of Air Quality

Subject: Important Information to Display Regarding a Public Notice for an Air Permit

Applicant Name: Dalton Corporation, Warsaw Manufacturing Facility
Permit Number: 085-39391-00003 and 085-39431-00003

Enclosed is a copy of important information to make available to the public. This proposed project is regarding a source that may have the potential to significantly impact air quality. Librarians are encouraged to educate the public to make them aware of the availability of this information. The following information is enclosed for public reference at your library:

- Notice of a 30-day Period for Public Comment
- Request to publish the Notice of 30-day Period for Public Comment
- Draft Permit and Technical Support Document

You will not be responsible for collecting any comments from the citizens. Please refer all questions and request for the copies of any pertinent information to the person named below.

Members of your community could be very concerned in how these projects might affect them and their families. Please make this information readily available until you receive a copy of the final package.

If you have any questions concerning this public review process, please contact Joanne Smiddle-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185. Questions pertaining to the permit itself should be directed to the contact listed on the notice.

Enclosures
PN Library 1/9/2017
Notice of Public Comment

June 20, 2018
Dalton Corporation, Warsaw Manufacturing Facility
085-39391-00003 and 085-39431-00003

Dear Concerned Citizen(s):

You have been identified as someone who could potentially be affected by this proposed air permit. The Indiana Department of Environmental Management, in our ongoing efforts to better communicate with concerned citizens, invites your comment on the draft permit.

Enclosed is a Notice of Public Comment, which has been placed in the Legal Advertising section of your local newspaper. The application and supporting documentation for this proposed permit have been placed at the library indicated in the Notice. These documents more fully describe the project, the applicable air pollution control requirements and how the applicant will comply with these requirements.

If you would like to comment on this draft permit, please contact the person named in the enclosed Public Notice. Thank you for your interest in the Indiana’s Air Permitting Program.

Please Note: If you feel you have received this Notice in error, or would like to be removed from the Air Permits mailing list, please contact Patricia Pear with the Air Permits Administration Section at 1-800-451-6027, ext. 3-6875 or via e-mail at PPEAR@IDEM.IN.GOV. If you have recently moved and this Notice has been forwarded to you, please notify us of your new address and if you wish to remain on the mailing list. Mail that is returned to IDEM by the Post Office with a forwarding address in a different county will be removed from our list unless otherwise requested.
AFFECTED STATE NOTIFICATION OF PUBLIC COMMENT PERIOD
DRAFT INDIANA AIR PERMIT

June 20, 2018

A 30-day public comment period has been initiated for:

Permit Number: 085-39391-00003 and 085-39431-00003
Applicant Name: Dalton Corporation, Warsaw Manufacturing Facility
Location: Warsaw, Kosciusko County, Indiana

The public notice, draft permit and technical support documents can be accessed via the IDEM Air Permits Online site at:
http://www.in.gov/ai/appfiles/idem-caats/

Questions or comments on this draft permit should be directed to the person identified in the public notice by telephone or in writing to:

Indiana Department of Environmental Management
Office of Air Quality, Permits Branch
100 North Senate Avenue
Indianapolis, IN  46204

Questions or comments regarding this email notification or access to this information from the EPA Internet site can be directed to Chris Hammack at chammack@idem.IN.gov or (317) 233-2414.
**Mail Code 61-53**

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<td>Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204</td>
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<td></td>
<td>Michael Schall  Dalton Corporation Warsaw Manufacturing Facility 1900 E Jefferson St Warsaw IN 46580 (Source RM)</td>
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<td>John Haas  Dalton Corporation Warsaw Manufacturing Facility 1900 E Jefferson St Warsaw IN 46580 (RO RM)</td>
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<td>Warsaw City Council and Mayors Office 102 S Buffalo Street Warsaw IN 46580 (Local Official)</td>
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<td>Paul Rhodes  1901 E. Main St Warsaw IN 46580 (Affected Party)</td>
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<td>Warsaw Community Public Library 310 E Main St Warsaw IN 46580-2882 (Library)</td>
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<td>Kosciusko County Board of Commissioners 100 W. Center St, Room 220 Warsaw IN 46580 (Local Official)</td>
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<td>James Rickun James S. Rickun Environmental Consulting 4933 Black Oak Drive Madison WI 53711-4373 (Consultant)</td>
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<td>Kosciusko County Health Department 100 W. Center Street, 3rd Floor Warsaw IN 46580-2877 (Health Department)</td>
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