



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

NOTICE OF 30-DAY PERIOD FOR PUBLIC COMMENT

Preliminary Findings Regarding a
Significant Revision to a
Minor Source Operating Permit (MSOP)

for Carlisle Industrial Brake and Friction in Monroe County

Significant Permit Revision No.: 105-37848-00013

The Indiana Department of Environmental Management (IDEM) has received an application from Carlisle Industrial Brake and Friction, located at 1031 E. Hillside Dr., Bloomington, IN 47401, for a significant revision of its MSOP issued on April 22, 2015. If approved by IDEM's Office of Air Quality (OAQ), this proposed revision would allow Carlisle Industrial Brake and Friction to make certain changes at its existing source. Carlisle Industrial Brake and Friction has applied to construct and operate one mixer, one drum splitter, one natural gas-fired oven, and one natural gas-fired hot water heater and remove one mixer and one natural gas-fired oven.

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. 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:

Monroe County Public Library
303 East Kirkwood Avenue
Bloomington, IN 47408

and

IDEM Southeast Regional Office
820 West Sweet Street
Brownstown, IN 47220-9557

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

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 number SPR 105-37848-00013 in all correspondence.

Comments should be sent to:

Dominic Williams
IDEM, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(800) 451-6027, ask for extension 4-6555
Or dial directly: (317) 234-6555
Fax: (317) 232-6749 attn: Dominic Williams
E-mail: dwilliam2@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 Permit Guide on the Internet at: <http://www.in.gov/idem/5881.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 Dominic Williams of my staff at the above address.



Nathan C. Bell, Section Chief
Permits Branch
Office of Air Quality



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Peggy Mullins
Carlisle Industrial Brake and Friction
920 Lake Road
Medina, OH, 44256

Re: 105-37848-00013
Significant Revision to
M105-35216-00013

Dear Peggy Mullins:

Carlisle Industrial Brake and Friction was issued a Minor Source Operating Permit (MSOP) Renewal No. M105-35216-00013 on April 22, 2015, for a stationary motor vehicle parts and accessories manufacturing facility located at 1031 E. Hillside Dr., Bloomington, IN 47401. On November 10, 2016, the Office of Air Quality (OAQ) received an application from the source requesting to construct and operate one mixer, one drum slitter, one natural gas-fired oven, and one natural gas-fired hot water heater and remove one mixer and one natural gas-fired oven. Pursuant to the provisions of 326 IAC 2-6.1-6, these changes to the permit are required to be reviewed in accordance with the Significant Permit Revision (SPR) procedures of 326 IAC 2-6.1-6(i). Pursuant to the provisions of 326 IAC 2-6.1-6, a significant permit revision to this permit is hereby approved as described in the attached Technical Support Document (TSD).

The following construction conditions are applicable to the proposed project:

1. General Construction Conditions
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.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 (Revocation), 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.

Pursuant to 326 IAC 2-6.1-6, this permit shall be revised by incorporating the significant permit revision into the permit.

All other conditions of the permit shall remain unchanged and in effect. Please find attached the entire MSOP as revised. The permit references the below listed attachments. Since these attachments

have been provided in previously issued approvals for this source, IDEM OAQ has not included a copy of these attachments with this revision:

- Attachment A: 40 CFR 60, Subpart JJJJ, Standard of Performance for Stationary Spark Ignition Internal Engines
- Attachment B: 40 CFR 63, Subpart ZZZZ, National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- Attachment C: 40 CFR 60, Subpart IIII, Standard of Performance for Stationary Compression Ignition Internal Engines

Previously issued approvals for this source containing these attachments are available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>.

Federal rules under Title 40 of United States Code of Federal Regulations may also be found on the U.S. Government Printing Office's Electronic Code of Federal Regulations (eCFR) website, located on the Internet at: http://www.ecfr.gov/cgi-bin/text-idx?tpl=/ecfrbrowse/Title40/40tab_02.tpl.

A copy of the permit is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter, please contact Dominic Williams of my staff at 317-234-6555 or 1-800-451-6027, and ask for extension 4-6555.

Sincerely,

Nathan C. Bell, Section Chief
Permits Branch
Office of Air Quality

Attachments: Technical Support Document and revised permit

NB/DW

cc: File - Monroe County
Monroe County Health Department
U.S. EPA, Region V
Compliance and Enforcement Branch



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Minor Source Operating Permit Renewal OFFICE OF AIR QUALITY

**Carlisle Industrial Brake and Friction
1031 E. Hillside Dr.
Bloomington, Indiana 47401**

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

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

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 2-8 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.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No. M105-35216-00013	
Issued by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: April 22, 2015 Expiration Date: April 22, 2025

Minor Permit Revision No. 105-36409-00013, issued on December 2, 2015

Significant Permit Revision No. 105-37848-00013	
Issued by: Nathan C. Bell, Section Chief Permits Branch Office of Air Quality	Issuance Date: Expiration Date: April 22, 2025

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- Attachment A: 40 CFR 60, Subpart JJJJ
- Attachment B: 40 CFR 63, Subpart ZZZZ
- Attachment C: 40 CFR 60, Subpart IIII

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SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary motor vehicle parts and accessories manufacturing facility.

Source Address:	1031 E. Hillside Dr., Bloomington, Indiana 47401
General Source Phone Number:	(812) 336-3811
SIC Code:	3714
County Location:	Monroe
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One Brake Assembly and Brake Part manufacturing operation, including the following:
 - (1) Metal Surface Coating Operations, including the following:
 - (A) One (1) paint booth, identified as NPB1, constructed in 2012, with a maximum application rate of one and seventy-eight hundredths (1.78) gal/hr, equipped with dry filters for particulate control, and utilizing airless paint application.
 - (B) One (1) light rail paint booth, identified as PB4, constructed in 2010, using air atomization to spray adhesive on metallic friction material backing plates, with a maximum application rate of one hundred two thousandths (0.102) gal/hr and a maximum usage rate of less than five (5) gal/day, equipped with dry filters for particulate control, and exhausting outside the building through stack S-PB4.
 - (C) One (1) natural gas-fired Aquamaster CM 3600 parts washer/conveyorized degreaser, identified as PW1, constructed in 2007, with a maximum throughput capacity of ninety (90) parts/hr, consisting of one (1) twenty-seven hundredths (0.27) MMBtu/hr pre-wash burner, one (1) seventy hundredths (0.70) MMBtu/hr dip stage burner, one (1) twenty-seven hundredths (0.27) MMBtu/hr rinse stage burner, and one (1) twenty-five hundredths (0.25) MMBtu/hr blow-off stage burner, using a water-based VOC and HAP free alkaline solvent, uncontrolled and exhausting to the outside through stacks S-PW1A, S-PW1B, and S-PW1C;

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- (D) Thirteen (13) parts washers/cold cleaner degreasers, each using a water-based alkaline solvent, uncontrolled and exhausting to the inside of the building. No VOC or HAP emissions are anticipated from the solvent usage in these units. Including the following:
 - (i) Four (4) parts washers /cold cleaner degreasers, identified as PW2 through PW4 and PW6, each constructed in 1993, with a maximum solvent replacement volume of six hundredths (0.06) gal/day;
 - (ii) One (1) parts washers /cold cleaner degreaser, identified as PW5, constructed in 1988, with a maximum solvent replacement volume of six hundredths (0.06) gal/day; and
 - (iii) Two (2) parts washers /cold cleaner degreasers, identified as PW7 and PW8, each constructed in 2009, with a maximum replacement volume of six teen hundredths (0.16) gal/day.
 - (iv) One (1) parts washers /cold cleaner degreaser, identified as PW9, constructed in 2010, with a maximum solvent replacement volume of six hundredths (0.06) gal/day.
 - (v) Four (4) parts washers, identified as PW10 through PW13, constructed in 2011, each with a maximum capacity of 200 gallons, and utilizing an alkaline based solvent.
 - (vi) One (1) conveyORIZED parts washer, identified as PW14, constructed in 2010, with a maximum capacity of 200 gallons, and utilizing an alkaline based solvent.
 - (E) One (1) natural gas-fired paint drying oven, identified as OV1, constructed in 1992, with a maximum heat input capacity of one (1.00) MMBtu/hr, uncontrolled and exhausting outside the building through stack S-OV1; and
 - (F) One (1) natural gas-fired Permafuse oven, identified as OV2, constructed in 2007, with a maximum heat input capacity of eighty hundredths (0.80) MMBtu/hr, processing a maximum of fifteen (15.0) brake parts, or twenty-two hundredths (0.22) pounds of bonding film, per hour, uncontrolled and exhausting outside the building through stack S-OV2.
- (2) Metal Machining Operations
- (A) One (1) vertical turret lathe M1900, identified as LM3, constructed in 1981, having a maximum throughput of five (5) metal automotive brake parts/hour or two hundred fifty 250 pounds of metal parts/hour, with particulate emissions controlled by a portable dust collector, identified as baghouse BH5, and exhausting inside the building; and
- (3) Metal Grinding and Finishing Operations
- (A) One (1) grinder M1796, identified as G1, constructed in 2007, for the finishing of metal brake parts, having a maximum throughput of eight (8) parts/hour or five tenths (0.5) lbs/hour, with particulate emissions controlled by baghouse (BH3), and exhausting inside the building; and

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- (B) One (1) grinder M1797, identified as G2, constructed in 2007, having a maximum throughput of twenty (20) parts/hour or five tenths (0.5) lbs/hour, with particulate emissions controlled by baghouse (BH4), and exhausting inside the building.
- (b) Clutch lining manufacturing operation, including the following;
- (1) Friction Materials Closed/Compression Molding Operations
 - (A) One (1) dry mix batch process for making friction materials, including:
 - (i) One (1) mixer, identified as M1, constructed in 2010, for the mixing of dry friction materials only (this mixer is not physically capable of using a VOC solvent), having a maximum throughput capacity of two hundred fifty (250) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1.
 - (B) One (1) wet mix batch process for making friction materials, including:
 - (i) One (1) mixer, identified as M2, approved for construction in 2017, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1; and
 - (ii) One (1) 750-gallon above ground solvent storage tank, identified as T1, for storing S-1015 solvent for use in Mixer M2, constructed in 2010, with a shell length of 6 feet, a diameter of 4.5 feet, and a maximum throughput usage of 6,750 gallons per year.
 - (C) Eight (8) clutch lining presses, identified as PR1 through PR8, for the forming of friction materials into clutch lining parts, constructed in 2010, electrically heated, having a combined maximum throughput capacity of thirty (30) lbs/hour, uncontrolled and exhausting inside the building;
 - (D) One (1) pre-form machine, identified as PM1, constructed in 2010, for the forming of friction materials into pre-form blocks, having a maximum throughput capacity of two hundred (200) lbs/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (E) Three (3) pre-form machines, identified as PM2, PM3, and PM4, constructed in 2010, for the forming of friction materials into pre-form blocks, having a combined maximum throughput capacity of two hundred (200) lbs/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (F) Two (2) military block presses, identified as PR9 and PR10, constructed in 2010, for the forming of pre-form blocks into military blocks, electrically heated, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled and exhausting inside the building;

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- (G) Three (3) light rail/OHDB mold presses, identified as PR11, PR13, and PR14, constructed in 2010, for the pressing of friction material into molds, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled, and exhausting inside the building;
 - (H) Four (4) OHDB mold presses, identified as PR15, PR16, PR17, and PR18, constructed in 2010, for the pressing of friction material into molds, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled, and exhausting inside the building;
 - (I) One (1) 1000T down acting press, identified as PR20, constructed in 2010, for the pressing of friction material, having a maximum throughput capacity of one hundred (100) lbs/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (J) One (1) 2500T up acting press, identified as PR21, constructed in 2010, for the pressing of friction material, having a maximum throughput capacity of one hundred (100) lbs/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (K) Two (2) military block/OHDB mold presses, identified as PR22 and PR23, constructed in 2010, for the pressing of friction materials into molds, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled, and exhausting inside the building;
 - (L) Four (4) cabinet ovens, identified as OV3 through OV6, constructed in 2010, for the curing of clutch lining and military block parts, electrically heated, having a combined maximum throughput capacity of two hundred (200) lbs of molded parts/hour, uncontrolled and exhausting outside the building through stacks S-OV3 through S-OV6;
 - (M) Two (2) cabinet ovens, identified as OV8 and OV9, constructed in 2010, for curing of molded parts, electrically heated, having a combined maximum throughput capacity of two hundred (200) lbs of molded parts/hour, uncontrolled, and exhausting outside the building through stacks S-OV8 and S-OV9; and
 - (N) One (1) natural gas-fired batch oven, identified as OV11, approved in 2017 for construction, for curing molded parts, with a maximum heat input capacity of 0.5 MMBtu per hour, having a maximum throughput of 100 pounds per hour, using no controls, and exhausting indoors.
- (2) Friction Materials Machining Operations
- (A) One (1) cutting machine, identified as C1, constructed in 2010, for the sizing of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (B) One (1) slitting machine, identified as S1, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;

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- (C) One (1) drill machine, identified as D1, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (D) One (1) slotting machine, identified as S3, constructed in 2010, for the slotting of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (E) One (1) saw machine, identified as SW1, constructed in 2010, for the sizing of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6; and
 - (F) One (1) drill machine, identified as D2, constructed in 2010, for the drilling of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2.
 - (G) One (1) CNC bridge mill machine, identified as BM1, constructed in 2011, for the milling of pre-formed friction materials, having a maximum throughput capacity of two hundred (200) lbs of friction materials per hour, with particulate emissions controlled by a baghouse (BH2), and exhausting outside the building through stack S-BH2.
 - (H) One (1) drum slitter, identified as S6, constructed in 2016, for the shaping of molded friction parts, with a maximum capacity of 200 pounds of molded parts per hour, using baghouse BH6 as particulate control, and exhausting to stack S-BH6.
- (3) Friction Materials Grinding and Finishing Operations
- (A) One (1) sander, identified as S2, constructed in 2010, for the sizing of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (B) One (1) sander, identified as S4, constructed in 2010, for the sanding of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (C) One (1) sander, identified as S5, constructed in 2012, for the sanding of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;

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- (D) One (1) grinder, identified as G3, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
- (E) One (1) grinder, identified as G4, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
- (F) One (1) grinder, identified as G5, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of one hundred (100) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
- (G) One (1) grinder, identified as G6, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of one hundred (100) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
- (H) One (1) grinder, identified as G7, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
- (I) One (1) grinder, identified as G8, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6; and
- (J) One (1) drum grinder, identified as G9, approved in 2015 for construction, with a maximum capacity of 200 pounds per hour, using baghouse BH2 as particulate control, and exhausting to stack S-BH2;
- (K) One (1) burr grinder, identified as G10, approved in 2015 for construction, with a maximum capacity of 75 pounds per hour, using baghouse BH2 as particulate control, and exhausting to stack S-BH2;
- (L) One (1) grit blaster, identified as BL1, constructed in 2010, equipped with three (3) nozzles, having a maximum throughput capacity of eighty-seven (87) lbs of metal backing plates per hour and five hundred seventy-two and twelve hundredths (572.12) lbs of aluminum oxide grit/hour/nozzle, with particulate emissions controlled by a dust collector (DC1) and an integral cyclone separator, and exhausting inside the building.
- (M) Two (2) blast cabinets, identified as BL2 and BL3, constructed in 1998 and 2001 respectively, having a maximum throughput capacity of two hundred (200) lbs and seventy-five (75) lbs per hour, respectively, each utilizing a maximum of 319 pounds of abrasive material per hour, and each using a cyclone and dust collector for particulate control.

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- (c) One (1) natural gas-fired boiler, identified as B1, initially constructed in 1953 and a burner replacement in 1976, with a maximum heat input capacity of twelve and fifty-six hundredths (12.56) MMBtu per hour, uncontrolled and exhausting outside the building through stack S-B1.
- (d) One (1) natural gas-fired boiler, identified as B2, initially constructed in 1953 and a burner replacement in 1976, with a maximum capacity of twelve and fifty-six hundredths (12.56) MMBtu per hour, uncontrolled and exhausting outside the building through stack S-B2.
- (e) One (1) natural gas-fired hot water boiler, identified as HWB1, constructed in 1998, with a maximum heat input capacity of thirty-four hundredths (0.34) MMBtu/hr, uncontrolled and exhausting inside the building;
- (f) One (1) diesel-fired emergency fire pump, identified as FP2, approved in 2015 for construction, with a maximum capacity of 86 hp, and exhausting to stack FP2.

The pump is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.
- (g) One (1) natural gas-fired heat treat oven, used for maintenance and R&D, identified as OV7, constructed in 2010, with a maximum heat input capacity of sixty hundredths (0.60) MMBtu/hr, uncontrolled and exhausting outside the building through stack S-HT1;
- (h) Maintenance activities, as defined in 326 IAC 2-1.1-3(e)(34), including:
 - (1) Repair and maintenance of paved and unpaved roads, including paving or sealing, or both, of parking lots and roadways.
 - (2) Painting, including interior and exterior painting of buildings, and solvent use excluding degreasing operations utilizing halogenated organic solvents.
 - (3) Brazing, soldering, or welding operations and associated equipment; including: One (1) Welding Booth with Three (3) MIG Welders, One (1) TIG Welder, Two (2) Stick Welders, One (1) Cutting Torch, and One (1) Plasma Cutter
 - (4) Blast-cleaning equipment using water as the suspension agent and associated equipment.
 - (5) Lubrication, including:
 - (A) hand-held spray can lubrication;
 - (B) dipping metal parts into lubricating oil; or
 - (C) manual or automated addition of cutting oil in machining operations.
- (i) Four (4) horizontal mills, four (4) lathes, two (2) CNC machines, two (2) table saws, and five (5) bench grinders used for maintenance activities, constructed in 1981, all controlled by an area dust collector (MicroAir MX 3500, gas flow rate = 3,500cfm) and exhausting inside the building; and
- (j) Activities performed using hand-held equipment, as defined in 326 IAC 2-1.1-3(e)(35), including:
 - (1) Cutting, excluding cutting torches.

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- (2) Grinding.
- (3) Machining wood, metal, or plastic.
- (4) Surface grinding.
- (5) Turning wood, metal, or plastic.
- (k) Storage equipment and activities, as defined in 326 IAC 2-1.1-3(e)(39), including pressurized storage tanks and associated piping for the following:
 - (1) Acetylene.
 - (2) Liquid natural gas (LNG) (propane).
- (l) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (m) Application of oils, greases, lubricants or other nonvolatile materials applied as temporary protective coatings;
- (n) Replacement or repair of electrostatic precipitators, bags in baghouses and filters in other air filtration equipment;
- (o) One (1) Test Lab Facility, as defined in 326 IAC 2-1.1-3(e)(2); and
- (p) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]
- (q) One (1) natural gas-fired emergency generator, identified as EG1, constructed in 2013, with a maximum heat input capacity of 0.42 MMBtu/hr.

This unit is an affected source under 40 CFR 60, Subpart JJJJ and a new affected source under 40 CFR 63, Subpart ZZZZ.
- (r) One (1) natural gas-fired boiler, identified as HWB2, constructed in 1998, with a maximum heat input capacity of 0.34 MMBtu per hour.
- (s) One (1) natural gas-fired air makeup heater, identified as AMU1, constructed in 2010, with a maximum heat input rate of 2.02 MMBtu per hour.
- (t) Two (2) natural gas-fired air makeup heaters, identified as AMU2 and AMU3, constructed in 2010, each with a maximum heat input rate of 3.62 MMBtu per hour.
- (u) One (1) natural gas-fired hot water heater, identified as HWB3, constructed in 2016, with a maximum heat input capacity of 0.076 MMBtu per hour, using no controls, and exhausting indoors.

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SECTION B GENERAL CONDITIONS

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

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 2-1.1-1) shall prevail.

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

- (a) This permit, M105-35216-00013, is issued for a fixed term of ten (10) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

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

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

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

B.7 Duty to Provide Information

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

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.

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- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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

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

B.9 Preventive Maintenance Plan [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 Permittee shall implement the PMPs.

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- (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.
- (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.10 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to M105-35216-00013 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this permit.

B.11 Termination of Right to Operate [326 IAC 2-6.1-7(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 one hundred twenty (120) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.12 Permit Renewal [326 IAC 2-6.1-7]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

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

- (b) A timely renewal application is one that is:
 - (1) Submitted at least one hundred twenty (120) days prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-6.1 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the

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deadline specified, pursuant to 326 IAC 2-6.1-4(b), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.13 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

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

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
- (c) The Permittee shall notify the OAQ no later than thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.14 Source Modification Requirement

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

B.15 Inspection and Entry

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

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

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

B.16 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

- (a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

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

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

The application which shall be submitted by the Permittee does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

B.17 Annual Fee Payment [326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees due no later than thirty (30) calendar days of receipt of a bill from IDEM, OAQ,.
- (b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.18 Credible Evidence [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.

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SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

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

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

C.2 Permit Revocation [326 IAC 2-1.1-9]

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

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

C.3 Opacity [326 IAC 5-1]

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

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

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

The Permittee shall not operate an incinerator 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.

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

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

C.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.

- (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.

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

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

C.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.
- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date.
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by 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 2-6.1-5(a)(2)]

C.10 Compliance Monitoring [326 IAC 2-1.1-11]

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

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

- (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.

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

Corrective Actions and Response Steps

C.12 Response to Excursions or Exceedances

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

- (a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;
 - (2) review of operation and maintenance procedures and records; and/or
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall record the reasonable response steps taken.

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall 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.

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

C.14 Malfunctions Report [326 IAC 1-6-2]

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

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

C.15 General Record Keeping Requirements [326 IAC 2-6.1-5]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, 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.16 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

- (a) Reports required by conditions in Section D of this permit shall be submitted to:

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

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

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- (c) 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.

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SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) Brake Assembly and Brake Part manufacturing operation, including the following:
 - (1) Metal Surface Coating Operations, including the following:
 - (A) One (1) paint booth, identified as NPB1, constructed in 2012, with a maximum application rate of one and seventy-eight hundredths (1.78) gal/hr, equipped with dry filters for particulate control, and utilizing airless paint application.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.1.1 Volatile Organic Compound (VOC) Limit [326 IAC 8-2-9]

- (a) Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the volatile organic compound (VOC) emissions from any coatings delivered to each applicator shall not exceed three and five tenths (3.5) pounds of VOC per gallon of coating, excluding water, for coatings that are air dried or forced warm air dried at temperatures up to ninety degrees Celsius (90°C) (one hundred ninety-four degrees Fahrenheit (194°F)), as delivered to the applicator(s) in the paint booth (NPB1).
- (b) Pursuant to 326 IAC 8-2-9(f), work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not limited to, the following:
 - (1) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.
 - (2) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.
 - (3) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.
 - (4) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.
 - (5) Minimize VOC emissions from the cleaning application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

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

- (a) Particulate from the paint booth (NPB1) shall be controlled by a dry particulate filter and the Permittee shall operate the control device(s) in accordance with manufacturer's specifications.
- (b) If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:

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- (1) Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
- (2) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
- (c) If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

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

A Preventive Maintenance Plan is required for this facility and its associated 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 [326 IAC 2-6.1-5(a)(2)]

D.1.4 Volatile Organic Compounds (VOC)[326 IAC 8-1-2] [326 IAC 8-1-4]

Compliance with the VOC content limit contained in Condition D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

D.1.5 Record Keeping Requirements

- (a) To document the compliance status with Condition D.1.1, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC content limit established in Condition D.1.1.
 - (1) The VOC content of each coating material and solvent used.
 - (2) The amount of coating material and solvent less water used on a monthly basis.
 - (A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
 - (B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.
- (b) To document the compliance status with Condition D.1.2(c), the Permittee shall maintain a record of any actions taken if overspray is visibly detected.
- (c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

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SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-6.1-5(a)(1)]: Metal Machining Operations

- (a) One Brake Assembly and Brake Part manufacturing operation, including the following:
 - (2) Metal Machining Operations
 - (A) One (1) vertical turret lathe M1900, identified as LM3, constructed in 1981, having a maximum throughput of five (5) metal automotive brake parts/hour or two hundred fifty 250 pounds of metal parts/hour, with particulate emissions controlled by a portable dust collector, identified as baghouse BH5, and exhausting inside the building.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

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

Pursuant to 326 IAC 6-3-2(e) (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the vertical turret lathe (LM3) shall not exceed 1.452 pounds per hour when operating at a process weight rate of 425 pounds per hour.

This limitation was calculated as follows:

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:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

D.2.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for this facility and its control device. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-6.1-5(a)(2)]

D.2.3 Particulate Control

- (a) In order to comply with Condition D.2.1, the baghouse for particulate control shall be in operation and control emissions from the vertical turret lathe (LM3) at all times that the vertical turret lathe (LM3) is in operation.
- (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.

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SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-6.1-5(a)(1)]: Clutch Lining Manufacturing Operations

- (b) Clutch lining manufacturing operation, including the following:
 - (1) Friction Materials Closed/Compression Molding Operations
 - (A) One (1) dry mix batch process for making friction materials, including:
 - (i) One (1) mixer, identified as M1, constructed in 2010, for the mixing of dry friction materials only (this mixer is not physically capable of using a VOC solvent), having a maximum throughput capacity of two hundred fifty (250) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1.
 - (B) One (1) wet mix batch process for making friction materials, including:
 - (i) One (1) mixer, identified as M2, approved for construction in 2017, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1; and
 - (ii) One (1) 750-gallon above ground solvent storage tank, identified as T1, for storing S-1015 solvent for use in Mixer M2, constructed in 2010, with a shell length of 6 feet, a diameter of 4.5 feet, and a maximum throughput usage of 6,750 gallons per year.
 - (C) Eight (8) clutch lining presses, identified as PR1 through PR8, for the forming of friction materials into clutch lining parts, constructed in 2010, electrically heated, having a combined maximum throughput capacity of thirty (30) lbs/hour, uncontrolled and exhausting inside the building;
 - (D) One (1) pre-form machine, identified as PM1, constructed in 2010, for the forming of friction materials into pre-form blocks, having a maximum throughput capacity of two hundred (200) lbs/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (E) Three (3) pre-form machines, identified as PM2, PM3, and PM4, constructed in 2010, for the forming of friction materials into pre-form blocks, having a combined maximum throughput capacity of two hundred (200) lbs/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (F) Two (2) military block presses, identified as PR9 and PR10, constructed in 2010, for the forming of pre-form blocks into military blocks, electrically heated, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled and exhausting inside the building;
 - (G) Three (3) light rail/OHDB mold presses, identified as PR11, PR13, and PR14, constructed in 2010, for the pressing of friction material into molds, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled, and exhausting inside the building;

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- (H) Four (4) OHDB mold presses, identified as PR15, PR16, PR17, and PR18, constructed in 2010, for the pressing of friction material into molds, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled, and exhausting inside the building;
 - (I) One (1) 1000T down acting press, identified as PR20, constructed in 2010, for the pressing of friction material, having a maximum throughput capacity of one hundred (100) lbs/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (J) One (1) 2500T up acting press, identified as PR21, constructed in 2010, for the pressing of friction material, having a maximum throughput capacity of one hundred (100) lbs/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (K) Two (2) military block/OHDB mold presses, identified as PR22 and PR23, constructed in 2010, for the pressing of friction materials into molds, having a combined maximum throughput capacity of two hundred (200) lbs/hour, uncontrolled, and exhausting inside the building;
 - (L) Four (4) cabinet ovens, identified as OV3 through OV6, constructed in 2010, for the curing of clutch lining and military block parts, electrically heated, having a combined maximum throughput capacity of two hundred (200) lbs of molded parts/hour, uncontrolled and exhausting outside the building through stacks S-OV3 through S-OV6;
 - (M) Two (2) cabinet ovens, identified as OV8 and OV9, constructed in 2010, for curing of molded parts, electrically heated, having a combined maximum throughput capacity of two hundred (200) lbs of molded parts/hour, uncontrolled, and exhausting outside the building through stacks S-OV8 and S-OV9; and
 - (N) One (1) natural gas-fired batch oven, identified as OV11, approved in 2017 for construction, for curing molded parts, with a maximum heat input capacity of 0.5 MMBtu per hour, having a maximum throughput of 100 pounds per hour, using no controls, and exhausting indoors.
- (2) Friction Materials Machining Operations
- (A) One (1) cutting machine, identified as C1, constructed in 2010, for the sizing of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (B) One (1) slitting machine, identified as S1, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (C) One (1) drill machine, identified as D1, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;

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- (D) One (1) slotting machine, identified as S3, constructed in 2010, for the slotting of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (E) One (1) saw machine, identified as SW1, constructed in 2010, for the sizing of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6; and
 - (F) One (1) drill machine, identified as D2, constructed in 2010, for the drilling of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2.
 - (G) One (1) CNC bridge mill machine, identified as BM1, constructed in 2011, for the milling of pre-formed friction materials, having a maximum throughput capacity of two hundred (200) lbs of friction materials per hour, with particulate emissions controlled by a baghouse (BH2), and exhausting outside the building through stack S-BH2.
 - (H) One (1) drum slitter, identified as S6, constructed in 2016, for the shaping of molded friction parts, with a maximum capacity of 200 pounds of molded parts per hour, using baghouse BH6 as particulate control, and exhausting to stack S-BH6.
- (3) Friction Materials Grinding and Finishing Operations
- (A) One (1) sander, identified as S2, constructed in 2010, for the sizing of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (B) One (1) sander, identified as S4, constructed in 2010, for the sanding of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (C) One (1) sander, identified as S5, constructed in 2012, for the sanding of molded parts, having a maximum throughput capacity of seventy-five (75) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;
 - (D) One (1) grinder, identified as G3, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (E) One (1) grinder, identified as G4, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
 - (F) One (1) grinder, identified as G5, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of one hundred (100) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH2), and exhausting outside the building through stack S-BH2;

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- (G) One (1) grinder, identified as G6, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of one hundred (100) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
- (H) One (1) grinder, identified as G7, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6;
- (I) One (1) grinder, identified as G8, constructed in 2010, for the shaping of molded parts, having a maximum throughput capacity of two hundred (200) lbs of molded parts/hour, with particulate emissions controlled by baghouse (BH6), and exhausting outside the building through stack S-BH6; and
- (J) One (1) drum grinder, identified as G9, approved in 2015 for construction, with a maximum capacity of 200 pounds per hour, using baghouse BH2 as particulate control, and exhausting to stack S-BH2;
- (K) One (1) burr grinder, identified as G10, approved in 2015 for construction, with a maximum capacity of 75 pounds per hour, using baghouse BH2 as particulate control, and exhausting to stack S-BH2;
- (L) One (1) grit blaster, identified as BL1, constructed in 2010, equipped with three (3) nozzles, having a maximum throughput capacity of eighty-seven (87) lbs of metal backing plates per hour and five hundred seventy-two and twelve hundredths (572.12) lbs of aluminum oxide grit/hour/nozzle, with particulate emissions controlled by a dust collector (DC1) and an integral cyclone separator, and exhausting inside the building.
- (M) Two (2) blast cabinets, identified as BL2 and BL3, constructed in 1998 and 2001 respectively, having a maximum throughput capacity of two hundred (200) lbs and seventy-five (75) lbs per hour, respectively, each utilizing a maximum of 319 pounds of abrasive material per hour, and each using a cyclone and dust collector for particulate control.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.3.1 Particulate Limit [326 IAC 2-6.1-6(g)(5)(C)]

Pursuant to 326 IAC 2-6.1-6(g)(5)(C), the dust collector DC1 and the baghouses BH1, BH2, and BH6 shall comply with the following limits when any of the friction material mixing, machining, grinding, and/or finishing equipment is in operation:

- (a) Achieve and maintain at least ninety-nine (99%) efficiency.
- (b) No visible emissions.

Compliance with the above limits shall ensure that the potential to emit of PM from modifications 105-29821-00013 and 105-36409-00013 is less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 2-6.1-6(i) (Significant Permit Revisions) not applicable.

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D.3.2 Particulate [326 IAC 6-3-2]

- (a) Pursuant to 326 IAC 6-3-2(e)(2), the particulate emissions from the cutting machine (C1), saw machine (SW1), three (3) sanders (S2, S4, and S5), and grinder (G9) shall not exceed 0.551 pounds per hour, each, when operating at a process weight rate less than one hundred (100) pounds per hour.
- (b) Pursuant to 326 IAC 6-3-2(e) (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from each of the facilities listed in this condition shall not exceed the pound per hour limitations listed in the table below:

Emission Unit	Control Device	Process Weight Rate		Particulate Emission Limit (lb/hour)
		(lbs/hr)	(tons/hr)	
Slitting machine S1	BH6	200.0	0.100	0.877
Drum Slitter S6	BH6	200.0	0.100	0.877
Drill machine D1	BH6	200.0	0.100	0.877
Slotting machine S3	BH6	200.0	0.100	0.877
Drill machine D2	BH2	200.0	0.100	0.877
CNC bridge mill machine BM1	BH2	200.0	0.100	0.877
Grinder G3	BH6	200.0	0.100	0.877
Grinder G4	BH6	200.0	0.100	0.877
Grinder G5	BH2	100.0	0.050	0.551
Grinder G6	BH6	100.0	0.050	0.551
Grinder G7	BH6	200.0	0.100	0.877
Grinder G8	BH6	200.0	0.100	0.877
Grinder G10	BH2	200.0	0.100	0.877
Grit blaster BL1	DC1	1,803	0.902	3.83
Blast cabinet (BL2)	Dust collector	519	0.26	1.66
Blast cabinet (BL3)	Dust collector	394	0.197	1.38

These limitations were calculated as follows:

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:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

D.3.3 VOC Limitations [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the total input of VOC delivered to mixer M2 shall be less than 25 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit shall limit the VOC emissions from mixer M2 to less than twenty-five (25) tons per twelve (12) consecutive month period and shall render the requirements of 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

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D.3.4 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and any associated 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 [326 IAC 2-6.1-5(a)(2)]

D.3.5 Particulate Control

- (a) In order to comply with Conditions D.3.1 and D.3.2, the baghouse(s), integral cyclone separator, and dust collector for particulate control shall be in operation and control emissions from the friction material mixing, machining, grinding and finishing operations at all times that any of the friction material mixing, machining, grinding and/or finishing equipment is in operation.
- (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.3.6 Volatile Organic Compounds (VOC) [326 IAC 8-1-4][326 IAC 8-1-2(a)]

Compliance with the VOC input limitation contained in Condition D.3.3 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

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

D.3.7 Visible Emissions Notations

- (a) Visible emission notations of the baghouse stack exhausts (BH1, BH2, and BH6) shall be performed once per day during normal daylight operations. A trained employee or a trained contractor 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 or contractor is a person who has worked or trained 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. Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take response steps shall be considered a deviation from this permit.

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

D.3.8 Record Keeping Requirements

- (a) To document the compliance status with Condition D.3.7, the Permittee shall maintain records of daily visible emission notations of the baghouse stack exhausts. The Permittee shall include in its daily record when a visible emission notation is not taken

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and the reason for the lack of visible emission notation (e.g., the process did not operate that day).

- (b) To document compliance with Condition D.3.3, the Permittee shall maintain records in accordance with (1) through (5) below. Records maintained for (1) through (5) shall be taken as stated below and shall be complete and sufficient to establish compliance with the VOC input limitation established in Condition D.3.3.
 - (1) The VOC content of the solvent used less water.
 - (2) The amount of solvent used on a monthly basis.
 - (A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.
 - (B) Solvent usage records shall differentiate between those added to Mixer M2 operations and those used as coatings and cleanup solvents;
 - (3) The monthly cleanup solvent usage;
 - (4) The total VOC input for each month and each compliance period.
 - (5) The total VOC emitted for each month and each compliance period
- (c) Section C - General Record Keeping Requirements contains the Permittee's obligations with regard to the records required by this condition.

D.3.9 Reporting Requirements

A quarterly report of monthly solvent usage and a quarterly summary of the information to document the compliance status with Condition D.3.3 shall be submitted using the reporting form located at the end of this permit, or its equivalent, not later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meet the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-6.1-5(a)(1)]: Natural gas-fired Boilers

- (c) One (1) natural gas-fired boiler, identified as B1, initially constructed in 1953 and a burner replacement in 1976, with a maximum heat input capacity of twelve and fifty-six hundredths (12.56) MMBtu per hour, uncontrolled and exhausting outside the building through stack S-B1.
- (d) One (1) natural gas-fired boiler, identified as B2, initially constructed in 1953 and a burner replacement in 1976, with a maximum capacity of twelve and fifty-six hundredths (12.56) MMBtu per hour, uncontrolled and exhausting outside the building through stack S-B2.
- (f) One (1) natural gas-fired hot water boiler, identified as HWB1, constructed in 1998, with a maximum heat input capacity of thirty-four hundredths (0.34) MMBtu/hr, uncontrolled and exhausting inside the building;
- (r) One (1) natural gas-fired boiler, identified as HWB2, constructed in 1998, with a maximum heat input capacity of 0.34 MMBtu per hour.
- (u) One (1) natural gas-fired hot water heater, identified as HWB3, constructed in 2016, with a maximum heat input capacity of 0.076 MMBtu per hour, using no controls, and exhausting indoors.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.4.1 Particulate [326 IAC 6-2-3]

Pursuant to 326 IAC 6-2-3 (Particulate Limitations for Sources of Indirect Heating) the PM emissions from the two (2) natural gas-fired boilers, identified as B1 and B2, each, shall be limited to 0.8 lbs/MMBtu heat input.

This limitation is based on the following equation:

$$Pt = \frac{C \times a \times h}{76.5 \times Q^{0.75} \times N^{0.25}}$$

where

C = 50 u/m³

Pt = emission rate limit (lbs/MMBtu)

Q = total source heat input capacity (MMBtu/hr) (25.13)

N = number of stacks (2.0)

a = plume rise factor (0.67)

h = stack height (ft) (38.0)

Pursuant to 326 IAC 6-2-3(d) (Particulate Emission Limitations for Sources of Indirect Heating: emission limitations for facilities specified in 326 IAC 6-2-1(c)), PM from boilers B1 and B2, shall in no case exceed eight tenths (0.8) pounds of particulate matter per million British thermal units heat input.

D.4.2 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from each of the 0.34 MMBtu/hr natural gas-fired boilers (identified as HWB1 and HWB2) and the 0.076 MMBTU/hr natural gas-fired boiler (HWB3) shall be limited to 0.47 pounds per MMBtu heat input.

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This limitation is based on the following equation:

$$Pt = 1.09/Q^{0.26}$$

Where: Pt = Pounds of Particulate Matter emitted per million Btu (lb/MMBtu) heat input; and

Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input

(For HWB1 and HWB2, Q = 25.81 MMBtu/hr)

(For HWB3, Q = 25.886 MMBtu/hr).

D.4.3 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for boilers B1 and B2, and any associated control device(s). Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (q) One (1) natural gas-fired emergency generator, identified as EG1, constructed in 2013, with a maximum heat input capacity of 0.42 MMBtu/hr.

This unit is an affected source under 40 CFR 60, Subtitle JJJJ and a new affected source under 40 CFR 63, Subpart ZZZZ.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

E.1.1 General Provision Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR 60, Subpart A]

Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for the emergency generator (EG1) except as otherwise specified in 40 CFR Part 60, Subpart JJJJ.

E.1.2 Standard of Performance for Stationary Spark Ignition Internal Engines [326 IAC 12] [40 CFR 60, Subpart JJJJ]

Pursuant to 40 CFR Part 60, Subpart JJJJ, the Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart JJJJ, which are incorporated by reference as 326 IAC 12 (included as Attachment A to this permit), for the one (1) natural gas-fired emergency generator (EG1):

- (1) 40 CFR 60.4230(a)(4)(iv) and (c)
- (2) 40 CFR 60.4233(d)
- (3) 40 CFR 60.4234
- (4) 40 CFR 60.4237(c)
- (5) 40 CFR 60.4243(b), (d), (e), and (f)
- (6) 40 CFR 60.4245(a)
- (7) 40 CFR 60.4246
- (8) 40 CFR 60.4248
- (9) Table 1
- (10) Table 3

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SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (f) One (1) diesel-fired emergency fire pump, identified as FP2, approved in 2015 for construction, with a maximum capacity of 86 hp, and exhausting to stack FP2.

The pump is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

- (q) One (1) natural gas-fired emergency generator, identified as EG1, constructed in 2013, with a maximum heat input capacity of 0.42 MMBtu/hr.

This unit is an affected source under 40 CFR 60, Subtitle JJJJ and a new affected source under 40 CFR 63, Subpart ZZZZ.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

E.2.1 National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines [40 CFR Part 63, Subpart ZZZZ] [326 IAC 20-82]

Pursuant to CFR Part 63, Subpart ZZZZ, the Permittee shall comply with the following provisions of National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, which are incorporated by reference as 326 IAC 20-82 (included as Attachment B to this permit), for the natural gas-fired emergency generator (EG1) and diesel-fired emergency fire pump (FP2):

- (1) 40 CFR 63.6580
- (2) 40 CFR 63.6585
- (3) 40 CFR 63.6590(a)(2)(iii) and (c)(1)
- (4) 40 CFR 63.6595(a)(7)
- (5) 40 CFR 63.6665
- (6) 40 CFR 63.6670
- (7) 40 CFR 63.6675

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SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (f) One (1) diesel-fired emergency fire pump, identified as FP2, approved in 2015 for construction, with a maximum capacity of 86 hp, and exhausting to stack FP2.

The pump is an affected unit under the provisions of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

E.3.1 General Provision Relating to New Source Performance Standards [326 IAC 12-1] [40 CFR 60, Subpart A]

Pursuant to 40 CFR 60.1, the Permittee shall comply with the provisions of 40 CFR Part 60 Subpart A – General Provisions, which are incorporated by reference as 326 IAC 12-1 for the emergency fire pump (FP2) except as otherwise specified in 40 CFR Part 60, Subpart IIII.

E.3.2 Standard of Performance for Stationary Compression Ignition Internal Engines [326 IAC 12] [40 CFR 60, Subpart IIII]

Pursuant to 40 CFR Part 60, Subpart IIII, the Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart IIII, which are incorporated by reference as 326 IAC 12 (included as Attachment C to this permit), for the one (1) diesel-fired emergency fire pump (FP2):

- (1) 40 CFR 60.4200(a)(2)(ii)
- (2) 40 CFR 60.4205(c)
- (3) 40 CFR 60.4206
- (4) 40 CFR 60.4207
- (5) 40 CFR 60.4209
- (6) 40 CFR 60.4211(a), (c), (f), and (g)
- (7) 40 CFR 60.4214(b)
- (8) 40 CFR 60.4218
- (9) 40 CFR 60.4219
- (10) Table 3
- (11) Table 4
- (12) Table 8

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**Indiana Department of Environmental Management
Office of Air Quality
Compliance and Enforcement Branch**

Quarterly Report

Source Name: Carlisle Industrial Brake and Friction
Source Address: 1031 E. Hillside Drive, Bloomington, Indiana 47401
MSOP Permit No.: M105-28659-00013
Source: Mixer M2
Pollutant: VOC
Limit: The total input of VOC delivered to mixer M2 shall be less than 25 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER: _____ YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total

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

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone: _____

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INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

**OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

MINOR SOURCE OPERATING PERMIT

ANNUAL NOTIFICATION

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

Company Name:	Carlisle Industrial Brake and Friction
Address:	1031 E. Hillside Dr.
City:	Bloomington, Indiana 47401
Phone #:	(812) 336-3811
MSOP #:	M105-35216-00013

I hereby certify that Carlisle Industrial Brake and Friction is still in operation.

no longer in operation.

I hereby certify that Carlisle Industrial Brake and Friction is in compliance with the requirements of MSOP M105-35216-00013.

not in compliance with the requirements of MSOP M105-35216-00013.

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

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

Noncompliance:

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MALFUNCTION REPORT

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

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

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

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

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

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

COMPANY: _____ PHONE NO. () _____

LOCATION: (CITY AND COUNTY) _____

PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP: _____

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: _____

DATE/TIME MALFUNCTION STARTED: ____/____/20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE ____/____/20____ _____ AM/PM

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

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____

MEASURES TAKEN TO MINIMIZE EMISSIONS: _____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES: _____

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: _____

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: _____

INTERIM CONTROL MEASURES: (IF APPLICABLE) _____

MALFUNCTION REPORTED BY: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

*SEE PAGE 2

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

326 IAC 1-6-1 Applicability of rule

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

326 IAC 1-2-39 "Malfunction" definition

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

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

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

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

Technical Support Document (TSD) for a Significant Permit Revision to a Minor Source
Operating Permit (MSOP) Renewal

Source Description and Location
--

Source Name:	Carlisle Industrial Brake and Friction
Source Location:	1031 E. Hillside Dr., Bloomington, IN 47401
County:	Monroe
SIC Code:	3714 (Motor Vehicle Parts and Accessories)
Operation Permit No.:	M105-35216-00013
Operation Permit Issuance Date:	April 22, 2015
Significant Permit Revision No.:	105-37848-00013
Permit Reviewer:	Dominic Williams

On November 10, 2016, the Office of Air Quality (OAQ) received an application from Carlisle Industrial Brake and Friction related to a modification to an existing stationary motor vehicle parts and accessories manufacturing facility.

Existing Approvals

The source was issued MSOP Renewal No. M015-35216-00013 on April 22, 2015. The source has since received Administrative Amendment No. 105-36409-00013, issued on December 2, 2015.

County Attainment Status

The source is located in Monroe County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. ¹
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005, for the annual PM _{2.5} standard.
PM _{2.5}	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM _{2.5} standard.
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
¹ Unclassifiable 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 (NO_x) 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 NO_x emissions are considered when evaluating the rule applicability relating to ozone. Monroe County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM_{2.5}**
Monroe County has been classified as attainment for PM_{2.5}. Therefore, direct PM_{2.5}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) **Other Criteria Pollutants**
Monroe County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

- (a) The fugitive emissions of regulated pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability.
- (b) Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Status of the Existing Source

The table below summarizes the uncontrolled/unlimited potential to emit of the entire source, prior to the proposed revision. This PTE table is from the TSD or Appendix A of Administrative Amendment 105-36409-00013, issued on December 2, 2015.

Process/ Emission Unit	Uncontrolled/Unlimited Potential To Emit of the Entire Source After Revision (tons/year)								
	PM	PM10*	PM2.5**	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
Paint Booth (NPB1)	5.44	5.44	5.44	-	-	5.17	-	0.32	-
Light Rail Paint Booth (PB4)	0.53	0.53	0.53	-	-	0.12	-	-	-
Permafuse Oven (OV2) (solvent usage)	-	-	-	-	-	1.96	-	1.95	-
Metal Machining and Grinding Operations	9.34	0.93	0.93	-	-	-	-	3.06	1.12 (Chromium)
Friction Material Handling	0.22	0.08	0.08	-	-	-	-	-	-
Mixer M1	0.59	0.30	0.30	-	-	-	-	-	-
Mixer M2	-	-	-	-	-	24.99	-	-	-
Friction Materials Closed/ Compression Molding Operations	-	-	-	-	-	2.39	-	0.98	-
Friction Material Machining**	0.43	0.11	0.11	-	-	-	-	-	-
Friction Material Grinding and Finishing Operations**	33.08	32.57	32.57	-	-	-	-	0.06	-
Natural Gas Combustion	0.33	1.31	1.31	0.10	17.26	0.95	14.50	0.33	-
Fire Pump	0.05	0.05	0.05	0.04	0.67	0.05	0.14	1.8E-04	-
Emergency Generator	4.0E-3	0.01	0.01	0.00	0.33	0.01	0.04	0.01	-
Welding	9.6E-4	9.6E-4	9.6E-4	-	-	-	-	8.8E-5	-
Degreasers and Parts Washers	-	-	-	-	-	0.01	-	-	-
Total PTE of Entire Source Excluding Fugitives	147.68	35.99	35.99	0.15	18.11	38.06	14.56	6.70	1.12 (Chromium)
Title V Major Source Thresholds	-	100	100	100	100	100	100	25	10
Paved Roads (Fugitive)	0.60	0.12	0.02	-	-	-	-	-	-
Total PTE of Entire Source Including Fugitives	148.28	36.11	36.01	0.15	18.11	38.06	14.56	6.70	1.12 (Chromium)
MSOP Threshold	25	25	25	25	25	25	-	-	-

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".

**PM_{2.5} listed is direct PM_{2.5}

Description of Proposed Revision

The Office of Air Quality (OAQ) has reviewed an application, submitted by Carlisle Industrial Brake and Friction on November 10, 2016, relating to the construction and operation of one mixer, one drum slitter, one natural gas-fired oven, and one natural gas-fired hot water heater and the removal of one mixer and one natural gas-fired oven.

The following is a list of the new emission units and pollution control devices:

- (a) One (1) mixer, identified as M2, approved in 2017 for construction, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1.
- (b) One (1) natural gas-fired batch oven, identified as OV11, approved in 2017 for construction, for curing molded parts, with a maximum heat input capacity of 0.5 MMBtu per hour, having a maximum throughput of 100 pounds per hour, using no controls, and exhausting indoors.

The following is a list of the unpermitted emission units:

- (c) One (1) drum slitter, identified as S6, constructed in 2016, for the shaping of molded friction parts, with a maximum capacity of 200 pounds of molded parts per hour, using baghouse BH6 as particulate control, and exhausting to stack S-BH6.
- (d) One (1) natural gas-fired hot water heater, identified as HWB3, constructed in 2016, with a maximum heat input capacity of 0.076 MMBtu per hour, using no controls, and exhausting indoors.

The following units have been removed from the source:

- (e) One (1) mixer, identified as M2, constructed in 2010, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1.
- (f) One (1) natural gas-fired cabinet oven, identified as OV10, constructed in 2010, for curing molded parts, with a maximum heat input capacity of thirty hundredths (0.30) MMBtu/hr, having a maximum throughput capacity of one hundred (100) lbs/hour, uncontrolled, and exhausting outside the building through stack S-OV10.

Enforcement Issues

IDEM, OAQ is aware that equipment has been constructed and operated prior to receipt of the proper permit. IDEM, OAQ is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction and operating permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – MSOP Revision

The following table is used to determine the appropriate permit level under 326 IAC 2-6.1-6. This table reflects the PTE before controls of the proposed revision. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Uncontrolled/Unlimited Potential To Emit of Proposed Revision (tons/year)								
	PM	PM10	PM2.5	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP
Mixer M2*	0.26	0.13	0.13	0.0	0.0	27.40	0.0	0.0	-
Friction Material Handling (Mixer M2)	0.10	0.03	0.03	0.0	0.0	0.0	0.0	0.0	-
Friction Material Machining (Drum Slitter S6)	7.45	0.74	0.74	0.0	0.0	0.0	0.0	0.0	-
Natural Gas Combustion (OV11 and HWB3)	4.7E-3	0.02	0.02	1.5E-3	0.25	0.01	0.21	4.7E-3	4.5E-3 Hexane
Total PTE of Proposed Revision	7.81	0.93	0.93	1.5E-3	0.25	27.42	0.21	4.7E-3	4.5E-03 Hexane

*The source will continue to take an enforceable limitation of 24.99 tons per year VOC input to Mixer M2 in order to render the requirements of 326 IAC 8-1-6 not applicable.

Pursuant to 326 IAC 2-6.1-6(i)(1)(E), this MSOP is revised through a Significant Permit Revision because the proposed revision is not an Administrative Amendment or Minor Permit Revision and the proposed revision involves the construction of new emission units with a potential to emit greater than or equal to twenty-five (25) tons per year VOC.

PTE of the Entire Source After Issuance of the MSOP Revision

The table below summarizes the uncontrolled/unlimited potential to emit of the entire source, with updated emissions shown as **bold** values and previous emissions shown as ~~strike through~~ values.

Process/ Emission Unit	Uncontrolled/Unlimited Potential To Emit of the Entire Source After Revision (tons/year)								
	PM	PM10*	PM2.5**	SO ₂	NOx	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
Paint Booth (NPB1)	5.44	5.44	5.44	0.0	0.0	5.17	0.0	0.32	-
Light Rail Paint Booth (PB4)	0.53	0.53	0.53	0.0	0.0	0.12	0.0	0.0	-
Permafuse Oven (OV2) (solvent usage)	0.0	0.0	0.0	0.0	0.0	1.96	0.0	1.95	-
Metal Machining and Grinding Operations	9.34	0.93	0.93	0.0	0.0	0.0	0.0	3.06	1.12 (Chromium)
Friction Material Handling	0.22	0.08	0.08	0.0	0.0	0.0	0.0	0.0	-
Mixer M1	0.59	0.30	0.30	0.0	0.0	0.0	0.0	0.0	-
Mixer M2	0.0	0.0	0.0	0.0	0.0	27.40	0.0	0.0	-
Friction Materials Closed/ Compression Molding Operations	0.0	0.0	0.0	0.0	0.0	2.39	0.0	0.98	-
Friction Material Machining**	42.84 50.26	10.98 11.73	10.98 11.73	0.0	0.0	0.0	0.0	0.0	-
Friction Material Grinding and Finishing Operations**	88.36	16.38	16.38	0.0	0.0	0.0	0.0	0.06	-
Natural Gas Combustion	0.33	1.30 1.32	1.30 1.32	0.10	17.11 17.31	0.94 0.95	14.38 14.54	0.32 0.33	-
Fire Pump	0.05	0.05	0.05	0.04	0.67	0.05	0.14	1.8E-04	-
Emergency Generator	4.0E-3	0.01	0.01	0.00	0.33	0.01	0.04	0.01	-
Welding	9.6E-4	9.6E-4	9.6E-4	0.0	0.0	0.0	0.0	8.8E-5	-
Degreasers and Parts Washers	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	-
Total PTE of Entire Source Excluding Fugitives	147.68 155.13	35.99 36.75	35.99 36.75	0.15	18.11 18.31	38.06 38.07	14.56 14.72	6.70	1.12 (Chromium)

Process/ Emission Unit	Uncontrolled/Unlimited Potential To Emit of the Entire Source After Revision (tons/year)								
	PM	PM10*	PM2.5**	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
Title V Major Source Thresholds	-	100	100	100	100	100	100	25	10
Paved Roads (Fugitive)	0.60	0.12	0.02	-	-	-	-	-	-
Total PTE of Entire Source Including Fugitives	148.28 155.73	36.11 36.87	36.01 36.77	0.15	18.11 18.31	38.06 38.07	14.56 14.72	6.70	1.12 (Chromium)
MSOP Threshold	25	25	25	25	25	25	-	-	-

* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant".
 **PM_{2.5} listed is direct PM_{2.5}

The table below summarizes the uncontrolled/unlimited potential to emit of the entire source after issuance of this revision. The table below was generated from the above table, with bold text un-bolded and strikethrough text deleted.

Process/ Emission Unit	Uncontrolled/Unlimited Potential To Emit of the Entire Source After Revision (tons/year)								
	PM	PM10*	PM2.5**	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
Paint Booth (NPB1)	5.44	5.44	5.44	0.0	0.0	5.17	0.0	0.32	-
Light Rail Paint Booth (PB4)	0.53	0.53	0.53	0.0	0.0	0.12	0.0	0.0	-
Permafuse Oven (OV2) (solvent usage)	0.0	0.0	0.0	0.0	0.0	1.96	0.0	1.95	-
Metal Machining and Grinding Operations	9.34	0.93	0.93	0.0	0.0	0.0	0.0	3.06	1.12 (Chromium)
Friction Material Handling	0.22	0.08	0.08	0.0	0.0	0.0	0.0	0.0	-
Mixer M1	0.59	0.30	0.30	0.0	0.0	0.0	0.0	0.0	-
Mixer M2	0.0	0.0	0.0	0.0	0.0	27.40	0.0	0.0	-
Friction Materials Closed/ Compression Molding Operations	0.0	0.0	0.0	0.0	0.0	2.39	0.0	0.98	-
Friction Material Machining**	50.26	11.73	11.73	0.0	0.0	0.0	0.0	0.0	-
Friction Material Grinding and Finishing Operations**	88.36	16.38	16.38	0.0	0.0	0.0	0.0	0.06	-
Natural Gas Combustion	0.33	1.32	1.32	0.10	17.31	0.95	14.54	0.33	-
Fire Pump	0.05	0.05	0.05	0.04	0.67	0.05	0.14	1.8E-04	-
Emergency Generator	4.0E-3	0.01	0.01	0.00	0.33	0.01	0.04	0.01	-
Welding	9.6E-4	9.6E-4	9.6E-4	0.0	0.0	0.0	0.0	8.8E-5	-
Degreasers and Parts Washers	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.0	-
Total PTE of Entire Source Excluding Fugitives	155.13	36.75	36.75	0.15	18.31	38.07	14.72	6.70	1.12 (Chromium)
Title V Major Source Thresholds	-	100	100	100	100	100	100	25	10
Paved Roads (Fugitive)	0.60	0.12	0.02	-	-	-	-	-	-
Total PTE of Entire Source Including Fugitives	155.73	36.87	36.77	0.15	18.31	38.07	14.72	6.70	1.12 (Chromium)
MSOP Threshold	25	25	25	25	25	25	-	-	-

Process/ Emission Unit	Uncontrolled/Unlimited Potential To Emit of the Entire Source After Revision (tons/year)								
	PM	PM10*	PM2.5**	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
* Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a "regulated air pollutant". **PM _{2.5} listed is direct PM _{2.5}									

MSOP Status

- (1) **Criteria Pollutants**
 This revision to an existing Title V minor stationary source will not change the minor status, because the uncontrolled/unlimited potential to emit criteria pollutants from the entire source will still be less than the Title V major source threshold levels. Therefore, the source will still be subject to the provisions of 326 IAC 2-6.1 (MSOP).
- (2) **HAPs**
 This revision will not change the minor status of the source, because the uncontrolled/unlimited potential to emit of any single HAP will still be less than ten (10) tons per year and the PTE of a combination of HAPs will still be less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Permit Level Determination – PSD or Emission Offset or Nonattainment NSR

- (a) **PSD Minor Source – PM**
 This modification to an existing PSD minor stationary source will not change the PSD minor status, because the uncontrolled/unlimited potential to emit PM from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) **PSD Minor Source – Other Regulated Pollutants**
 This modification to an existing PSD minor stationary source will not change the PSD minor status, because the uncontrolled/unlimited potential to emit of all PSD regulated pollutants from the entire source will continue to be less than the PSD major source threshold levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply. See PTE of the Entire Source After Issuance of the MSOP Revision Section above or Appendix A.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standards (NSPS) for Fossil-Fuel-Fired Steam Generators for Which Construction is Commenced After August 17, 1971, 40 CFR 60, Subpart D, (326 IAC 12), are not included in this proposed revision, because the one (1) natural gas-fired oven (OV11) and one (1) hot water heater (HWB3), each have a maximum heat input capacity of less than two hundred fifty (250) million British thermal units per hour and the one (1) natural gas-fired oven (OV11) is not a boiler.
- (b) The requirements of the New Source Performance Standards (NSPS) for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, 40 CFR 60, Subpart Da, Standards of Performance (326 IAC 12), are not included in this proposed revision, because the one (1) natural gas-fired oven (OV11) and one (1) hot water heater (HWB3) are each not an electric utility steam generating unit.

- (c) The requirements of the New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db (326 IAC 12), are not included in this proposed revision, because the one (1) natural gas-fired oven (OV11) and one (1) hot water heater (HWB3) each have a maximum heat input capacity of less than one-hundred (100) million British thermal units per hour.
- (d) The requirements of the New Source Performance Standards (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in this proposed revision, because the one (1) natural gas-fired oven (OV11) and one (1) hot water heater (HWB3) each have a maximum heat input capacity of less than ten (10) million British thermal units per hour and the one (1) natural gas-fired oven (OV11) is not a boiler.
- (e) The requirements of the New Source Performance Standards (NSPS) for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (326 IAC 12), are not included in this proposed revision for the one (1) natural gas-fired oven (OV11) and one (1) hot water heater (HWB3) are each not spark ignition internal combustion engines.
- (f) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included for this proposed revision.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (g) The requirements of the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD, are not included in this permit, because this source is not a major source of HAPs as defined in 40 CFR 63.2.
- (h) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ, are not included in this proposed revision for the one (1) hot water heater (HWB3) because it can only combust natural gas; therefore, the natural gas water heater is considered a gas-fired boiler, as defined by 40 CFR 63.11237, which are specifically exempted from this rule under 40 CFR 63.11195(e).

The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJ, are not included in this proposed revision for the one (1) natural gas-fired oven (OV11) since it is not considered a boiler, as defined by 40 CFR 63.11237.
- (i) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included for this proposed revision.

Compliance Assurance Monitoring (CAM)

- (j) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

- (a) 326 IAC 2-6.1 (Minor Source Operating Permits (MSOP))
MSOP applicability is discussed under the Permit Level Determination – MSOP section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))
See PTE of the Entire Source After Issuance of the MSOP Revision Section above.

- (c) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The proposed revision is not subject to the requirements of 326 IAC 2-4.1, since the unlimited potential to emit of HAPs from the new units is less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs.

See PTE of the Entire Source After Issuance of the MSOP Revision Section above.
- (d) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source-wide fugitive particulate emissions are less than 25 tons per year; therefore, this rule does not apply to this source.
- (e) 326 IAC 12 (New Source Performance Standards)
See Federal Rule Applicability Section of this TSD.
- (f) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Drum Slitter (S6)

- (g) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the drum slitter (S6) shall not exceed 0.88 pounds per hour when operating at a process weight rate of 0.1 tons per hour. The pound per hour limitation was calculated with the following equation:

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

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

The baghouse (BH6) shall be in operation at all times the drum slitter (S6) is in operation, in order to comply with this limit.

Friction Material Mixer (M2)

- (h) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2(b) (Particulate Emission Limitations for Manufacturing Processes), the friction material handling process and one (1) mixer (M2) are each not subject to the requirements of 326 IAC 6-3 since each has potential particulate emissions of less than five hundred-fifty-one thousandths (0.551) pounds per hour.
- (i) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The unlimited VOC potential emissions from the new unit is greater than twenty-five (25) tons per year. However, the source shall limit the potential VOC emissions from the new unit to less than twenty-five (25) tons per year. Therefore, the proposed revision is not subject to the requirements of 326 IAC 8-1-6.

In order to render the requirements of 326 IAC 8-1-6 not applicable, the mixer M2 shall be limited as follows:

- (1) The total input of VOC delivered to Mixer M2 shall not exceed 25 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

Compliance with this limit shall limit the potential to emit VOC from the mixer M2 to less than twenty-five (25) tons per 12 consecutive month period and shall render the requirements of 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities) not applicable.

- (j) There are no other 326 IAC 8 rules that are applicable to the mixer M2.

Natural Gas Combustion (OV11 and HWB3)

- (k) 326 IAC 4-2-2 (Incinerators)
 - (1) The one (1) natural gas-fired oven (OV11) is not an incinerator, as defined by 326 IAC 1-2-34, since it does not burn waste substances. Therefore, the one (1) natural gas-fired oven (OV11) is not subject to 326 IAC 4-2-2.
 - (2) The one (1) hot water heater (HWB3) is not an incinerator, as defined by 326 IAC 1-2-34, since it combusts only natural gas as a source of indirect heating.
- (l) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heat)
 - (1) The particulate matter (PM) emissions from the one (1) natural gas-fired oven (OV11) is not subject to 326 IAC 6-2, because it is not a source of indirect heating.
 - (2) The one (1) hot water heater (HWB3) was constructed after September 21, 1983. Therefore, the requirements of 326 IAC 6-2-4 apply to this indirect-fired heating unit.

Particulate matter emissions (Pt) from each unit shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

- Pt = Pounds of particulate matter emitted per million British thermal units (lb/MMBtu) heat input; and
- Q = Total source maximum operating capacity rating in million British thermal units per hour (MMBtu/hr) heat input. The maximum operating capacity rating is defined as the maximum capacity at which the facility is operated, or the nameplate capacity, whichever is specified in the facility's permit application, except when some lower capacity is contained in the facility's operation permit; in which case, the capacity specified in the operation permit shall be used.

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heat), particulate matter emissions (Pt) from each of the following units shall not exceed the limits specified in the table below:

There were four (4) boilers in operation at the source when this boiler was constructed with a total heat input capacity of 25.81 MMBtu/hr. Therefore, Q for HWB3 is 25.81 + 0.076 = 25.886 MMBtu/hr.

Unit ID	Construction Date	Total Source Maximum Operating Capacity (Q) (MMBtu/hr)	326 IAC 6-2-4 Emission Limit (Pt) (lbs/MMBtu)
HWB3	2016	25.886	0.47

Based on Appendix A and AP-42, the potential to emit PM from the one (1) hot water heater (HWB3) is calculated as follows:

$$1.90 \text{ lb PM/MMCF} \times 1 \text{ MMCF}/1,020 \text{ MMBtu} = 0.00186 \text{ lb PM/MMBtu}$$

Therefore, the one (1) hot water heater (HWB3) is able to comply with this rule without the use of a control device.

- (m) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
 - (1) Pursuant to 326 IAC 6-3-1(b)(14), the natural gas-fired oven (OV11) is not subject to the requirements of 326 IAC 6-3-2, since it has potential particulate emissions less than five hundred fifty-one thousandths (0.551) pound per hour.
 - (2) The one (1) hot water heater (HWB3) is not subject to the requirements of 326 IAC 6-3 because it is subject to the requirements of 326 IAC 6-2.
- (n) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
 Pursuant to 326 IAC 7-1.1-1, the one (1) hot water heater (HWB3) and one (1) natural gas-fired oven (OV11) are each not subject to the requirements of 326 IAC 7-1.1, since each has unlimited sulfur dioxide (SO₂) emissions less than twenty-five (25) tons per year and ten (10) pounds per hour, respectively.
- (o) 326 IAC 8-1-6 (New Facilities; General Reduction Requirements)
 The provisions of 326 IAC 8-1-6 are applicable to new facilities as of January 1, 1980, that have potential emissions of twenty-five (25) tons per year or more of VOC, are located anywhere in the state, and are not otherwise regulated by another Article 8 rule, 326 IAC 20-48 (Emission Standards for Hazardous Air Pollutants for Boat Manufacturing), or 326 IAC 20-56 (Reinforced Plastic Composites Production). The one (1) hot water heater (HWB3) and one (1) natural gas-fired oven (OV11) are each not to the requirements of 326 IAC 8-1-6, since each has unlimited potential to emit VOC of less than 25 tons per year.

Compliance Determination, Monitoring and Testing Requirements

- (a) The compliance determination and monitoring requirements applicable to this proposed revision are as follows:

Emission Unit/Control	Operating Parameters	Frequency
Drum Slitter S6/ Baghouse BH6	Visible Emissions	Once per day

These monitoring conditions are necessary because the baghouse (BH6) for the drum slitter (S6) must operate properly to assure compliance with 326 IAC 6-3 (Particulate Emissions Limitations for Manufacturing Processes).

Emission Unit/Control	Operating Parameters	Method
Mixer M2	VOC Content	Preparing or obtaining the "as supplied" and "as applied" VOC/HAP data sheets.
		Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4 as required by IDEM.

These monitoring conditions are necessary to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable.

Proposed Changes

The following changes listed below are due to the proposed revision. Deleted language appears as ~~struck through~~ text and new language appears as **bold** text:

- (1) The emission unit descriptive information has been revised in Sections A.2, D.3, and D.4 to reflect the addition of the one mixer, one drum slitter, one natural gas-fired oven, and one natural gas-fired hot water heater and the removal of one mixer and one natural gas-fired oven.
- (2) Condition D.3.2 Particulate [326 IAC 6-3-2] has been modified to reflect the applicability of the rule to the drum slitter S6.

- (3) Condition D.3.3 VOC Limitations [326 IAC 8-1-6] and the corresponding report form have been modified for clarity.
- (4) Condition D.4.2 Particulate Emissions [326 IAC 6-2-4] has been modified to reflect the applicability of the rule to the hot water heater HWB3.

...

A.2 Emission Units and Pollution Control Equipment Summary

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

...

- (b) Clutch lining manufacturing operation, including the following;

- (1) Friction Materials Closed/Compression Molding Operations

...

- (B) One (1) wet mix batch process for making friction materials, including:

- (i) ~~One (1) mixer, identified as M2, constructed in 2010, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1; and~~ **One (1) mixer, identified as M2, approved in 2017 for construction, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1; and**

...

- (N) ~~One (1) natural gas-fired cabinet oven, identified as OV10, constructed in 2010, for curing molded parts, with a maximum heat input capacity of thirty hundredths (0.30) MMBtu/hr, having a maximum throughput capacity of one hundred (100) lbs/hour, uncontrolled, and exhausting outside the building through stack S-OV10.~~ **One (1) natural gas-fired batch oven, identified as OV11, approved in 2017 for construction, for curing molded parts, with a maximum heat input capacity of 0.5 MMBtu per hour, having a maximum throughput of 100 pounds per hour, using no controls, and exhausting indoors.**

- (2) Friction Materials Machining Operations

...

- (H) **One (1) drum slitter, identified as S6, constructed in 2016, for the shaping of molded friction parts, with a maximum capacity of 200 pounds of molded parts per hour, using baghouse BH6 as particulate control, and exhausting to stack S-BH6.**

...

- (u) **One (1) natural gas-fired hot water heater, identified as HWB3, constructed in 2016, with a maximum heat input capacity of 0.076 MMBtu per hour, using no controls, and exhausting indoors.**

...

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-6.1-5(a)(1)]: Clutch Lining Manufacturing Operations

- (b) Clutch lining manufacturing operation, including the following:
 - (1) Friction Materials Closed/Compression Molding Operations
 - ...
 - (B) One (1) wet mix batch process for making friction materials, including:
 - (i) ~~One (1) mixer, identified as M2, constructed in 2010, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1; and~~ **One (1) mixer, identified as M2, approved in 2017 for construction, for the mixing of wet and dry friction materials, having a maximum throughput capacity of 185,397 lbs/year of VOC solvent and a maximum throughput capacity of two hundred (200) lbs/hour of dry material, with particulate emissions controlled by baghouse (BH1), and exhausting outside the building through stack S-BH1; and**
 - ...
 - (N) ~~One (1) natural gas-fired cabinet oven, identified as OV10, constructed in 2010, for curing molded parts, with a maximum heat input capacity of thirty hundredths (0.30) MMBtu/hr, having a maximum throughput capacity of one hundred (100) lbs/hour, uncontrolled, and exhausting outside the building through stack S-OV10.~~ **One (1) natural gas-fired batch oven, identified as OV11, approved in 2017 for construction, for curing molded parts, with a maximum heat input capacity of 0.5 MMBtu per hour, having a maximum throughput of 100 pounds per hour, using no controls, and exhausting indoors.**
 - ...
 - (2) Friction Materials Machining Operations
 - ...
 - (H) **One (1) drum slitter, identified as S6, constructed in 2016, for the shaping of molded friction parts, with a maximum capacity of 200 pounds of molded parts per hour, using baghouse BH6 as particulate control, and exhausting to stack S-BH6.**
 - ...

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

...

D.3.2 Particulate [326 IAC 6-3-2]

- (b) Pursuant to 326 IAC 6-3-2(e) (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from each of the facilities listed in this condition shall not exceed the pound per hour limitations listed in the table below:

Emission Unit	Control Device	Process Weight Rate		Particulate Emission Limit (lb/hour)
		(lbs/hr)	(tons/hr)	
Slitting machine S1	BH6	200.0	0.100	0.877
Drum Slitter S6	BH6	200.0	0.100	0.877
*****	*****	*****	*****	*****

...

D.3.3 VOC Limitations [326 IAC 8-1-6]

In order to render the requirements of 326 IAC 8-1-6 (New Facilities; General Reduction Requirements) not applicable, the total input of VOC delivered to mixer M2 shall be less than 25 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

...

SECTION D.4 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description: [326 IAC 2-6.1-5(a)(1)]: Natural gas-fired Boilers

...

(u) One (1) natural gas-fired hot water heater, identified as HWB3, constructed in 2016, with a maximum heat input capacity of 0.076 MMBtu per hour, using no controls, and exhausting indoors.

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

D.4.2 Particulate Emissions [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate emissions from each of the 0.34 MMBtu/hr natural gas-fired boilers (identified as HWB1 and HWB2) **and the 0.076 MMBTU/hr natural gas-fired boiler (HWB3)** shall be limited to 0.47 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = 1.09/Q^{0.26}$$

Where: Pt = Pounds of Particulate Matter emitted per million Btu (lb/MMBtu) heat input; and
 Q = Total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input
 (For HWB1 and HWB2, Q = 25.81 MMBtu/hr)
(For HWB3, Q = 25.886 MMBtu/hr).

...

QUARTERLY REPORT FORM

...

Limit: The total input of VOC delivered to mixer M2 shall be less than 25 tons per twelve (12) consecutive month period, with compliance determined at the end of each month.

...

Additional Changes

IDEM, OAQ made additional revisions to the permit as described below in order to update the language to match the most current version of the applicable rule, to eliminate redundancy within the permit, and to provide clarification regarding the requirements of these conditions.

- (1) IDEM added the rule citation 326 IAC 2-6.1-5(a)(2) to the Compliance Determination Requirements subsection title in Sections D. 1 to D.3 to clarify the authority of these conditions.

...

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

...

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

...

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

...

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

...

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

...

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

...

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 November 10, 2016.

The construction and operation of this proposed revision shall be subject to the conditions of the attached proposed MSOP Significant Permit Revision No. 105-37848-00013. The staff recommends to the Commissioner that this MSOP Significant Permit Revision be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Dominic Williams 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) 234-6555 or toll free at 1-800-451-6027 extension 4-6555.
- (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 Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

**Appendix A: Emissions Calculations
Summary of Emissions**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Unlimited/Uncontrolled Potential to Emit (tons/year)									
Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
Paint Booth (NPB1)	5.44	5.44	5.44	-	-	5.17	-	0.32	-
Light Rail Paint Booth (PB4)	0.53	0.53	0.53	-	-	0.12	-	-	-
Permafuse Oven (OV2) (solvent usage)	-	-	-	-	-	1.96	-	1.95	-
Metal Machining and Grinding Operations	9.34	0.93	0.93	-	-	-	-	3.06	1.12
Friction Material Handling	0.22	0.08	0.08	-	-	-	-	-	-
Mixer M1	0.59	0.30	0.30	-	-	-	-	-	-
Mixer M2	-	-	-	-	-	27.40	-	-	-
Friction Materials Closed/Compression Molding Operations	-	-	-	-	-	2.39	-	0.98	-
Friction Material Machining	50.26	11.73	11.73	-	-	-	-	-	-
Friction Material Grinding and Finishing Operations	88.36	16.38	16.38	-	-	-	-	0.06	-
Natural Gas Combustion	0.33	1.32	1.32	0.10	17.31	0.95	14.54	0.33	-
Fire Pump	0.05	0.05	0.05	0.04	0.67	0.05	0.14	1.8E-04	-
Emergency Generator	4.0E-03	0.01	0.01	6.2E-05	0.33	0.01	0.04	0.01	-
Welding	9.6E-04	9.6E-04	9.6E-04	-	-	-	-	8.8E-05	-
Degreasers and Parts Washers	-	-	-	-	-	0.01	-	-	-
Total (Non-Fugitive)	155.13	36.75	36.75	0.15	18.31	38.07	14.72	6.70	1.12
Paved Roads (Fugitive)	0.60	0.12	0.02	-	-	-	-	-	-
Total (Non-Fugitive + Fugitive)	155.73	36.87	36.77	0.15	18.31	38.07	14.72	6.70	1.12

Limited Potential to Emit (tons/year)									
Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Single HAP (Chromium)
Paint Booth (NPB1)	5.44	5.44	5.44	-	-	5.17	-	0.32	-
Light Rail Paint Booth (PB4)	0.53	0.53	0.53	-	-	0.12	-	-	-
Permafuse Oven (OV2) (solvent usage)	-	-	-	-	-	1.96	-	1.95	-
Metal Machining and Grinding Operations	9.34	0.93	0.93	-	-	-	-	3.06	1.12
Friction Material Handling	0.22	0.08	0.08	-	-	-	-	-	-
Mixer M1	0.59	0.30	0.30	-	-	-	-	-	-
Mixer M2***	-	-	-	-	-	24.99	-	-	-
Friction Materials Closed/Compression Molding Operations	-	-	-	-	-	2.39	-	0.98	-
Friction Material Machining	0.50	0.12	0.12	-	-	-	-	-	-
Friction Material Grinding and Finishing Operations**	33.08	32.57	32.57	-	-	-	-	0.06	-
Natural Gas Combustion	0.33	1.32	1.32	0.10	17.31	0.95	14.54	0.33	-
Fire Pump	0.05	0.05	0.05	0.04	0.67	0.05	0.14	1.8E-04	-
Emergency Generator	4.0E-03	0.01	0.01	6.2E-05	0.33	0.01	0.04	0.01	-
Welding	9.6E-04	9.6E-04	9.6E-04	-	-	-	-	8.8E-05	-
Degreasers and Parts Washers	-	-	-	-	-	0.01	-	-	-
Total (Non-Fugitive)	50.08	41.34	41.34	0.15	18.31	35.66	14.72	6.70	1.12
Paved Roads (Fugitive)	0.60	0.12	0.02	-	-	-	-	-	-
Total (Non-Fugitive + Fugitive)	50.68	41.45	41.35	0.15	18.31	35.66	14.72	6.70	1.12

* PM emissions limited pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes).

** Pursuant to 326 IAC 2-6.1-6(g)(5)(C), the source must achieve and maintain at least 99% efficiency and no visible emissions for baghouses BH1, BH2, and BH6, and dust collector DC1. These limits were to limit the potential to emit of PM from modifications 105-29821-00013 and 105-36409-00013 to each less than 25 tons per twelve (12) consecutive month period and render 326 IAC 2-6.1-6(i) (Significant Permit Revisions) not applicable. The source shall continue to comply with these limits at all

*** Enforceable limitation of 24.99 tons per year VOC input to Mixer M2 in order to render the requirements of 326 IAC 8-1-6 not applicable.

**Appendix A: Emissions Calculations
Summary of Emissions**

Company Name: Carlisle Industrial Brake & Friction
Suorce Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Unlimited/Uncontrolled Potential to Emit (tons/year)									
Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Mixer M2 (New)	0.26	0.13	0.13	-	-	27.40	-	0	0
Friction Material Handling (Mixer M2)	0.10	0.03	0.03	-	-	-	-	-	-
Friction Material Machining (Drum Slitter S6)	7.45	0.74	0.74	-	-	-	-	-	-
Natural Gas Combustion (OV11 and HWB3)	4.7E-03	0.02	0.02	1.5E-03	0.25	0.01	0.21	4.7E-03	4.5E-03 Hexane
Total	7.81	0.93	0.93	1.5E-03	0.25	27.42	0.21	4.7E-03	4.5E-03 Hexane

Limited Potential to Emit (tons/year)									
Emission Unit	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Mixer M2 (New)*	0.26	0.13	0.13	-	-	24.99	-	0	0
Friction Material Handling (Mixer M2)	0.10	0.03	0.03	-	-	-	-	-	-
Friction Material Machining (Drum Slitter S6)	7.45	0.74	0.74	-	-	-	-	-	-
Natural Gas Combustion (OV11 and HWB3)	4.7E-03	0.02	0.02	1.5E-03	0.25	0.01	0.21	4.7E-03	4.5E-03 Hexane
Total	7.81	0.93	0.93	1.5E-03	0.25	25.00	0.21	4.7E-03	4.5E-03 Hexane

*The source will continue to take an enforceable limitation of 24.99 tons per year VOC input to Mixer M2 in order to render the requirements of 326 IAC 8-1-6 not applicable. □

**Appendix A: Emissions Calculations
Volatile Organic Compound (VOC) Emissions
From the Surface Coating, Molding, and Shoe Cell Assembly Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Material	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Max Usage Rate (gal/hr)	Max Surface Coating Usage Rate (gal/day)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC (lbs/hour)	Actual VOC ^a (lb/day)	Potential VOC (lbs/day)	Actual VOC ^b (ton/yr)	Potential VOC (tons/year)	* Potential PM/PM10/PM2.5 (lbs/hour)	* Potential PM/PM10/PM2.5 (ton/year)	** Transfer Efficiency												
Brake Assembly & Brake Parts Manufacturing Line - Surface Coating																														
Paint Booth #1 (NPB1)																														
Red Oxide Primer***	10.21	64%	56%	8%	56%	36.00%	1.330	31.920	0.80	0.80	1.06	2.13	25.54	0.39	4.66	1.22	5.35	75%												
P1004 Black Gloss H/S H/F ACR ENA	8.11	39.99%	0.00%	39.99%	0.00%	60.01%	0.330	7.920	3.24	3.24	1.07	2.14	25.69	0.39	4.69	0.40	1.76	75%												
KRYLON® PAINT ALL® Fast Dry Enamel	6.59	50.50%	0.00%	50.50%	0.00%	13.00%	0.025	0.600	3.33	3.33	0.08	0.17	2.00	0.03	0.36	0.02	0.09	75%												
Clean-up Solvent (Xylene)	7.18	100.00%	0.00%	100.00%	0.00%	0.00%	0.0039	---	7.18	7.18	0.03	0.06	0.67	1.02E-02	0.12	0	0	100%												
Worst Paint + Enamel + Clean-up Solvent								32.52				2.36	28.35	0.43	5.17		5.44													
Light Rail Paint Booth (PB4)																														
Aqualock 6000***	8.70	72.88%	69.79%	3.09%	72.00%	27.12%	0.102	2.448	0.96	0.27	0.03	0.05	0.66	0.01	0.12	0.12	0.53	50%												
Shoe Cell Assembly Operations - Permafuse Oven (OV2)																														
Bond Prep Solvent (Denatured Alcohol)	6.61	100.00%	0%	100.00%	0%	0%	0.0013	---	3.24	6.61	0.01	0.07	0.21	0.01	0.04	0	0	100%												
Clutch Parts Manufacturing Line - Closed/Compression Molding																														
Solvent (S-1015)***	7.39	100.00%	0%	100.00%	0%	0%	0.0361	---	7.39	7.39	0.27	2.13	6.40	0.39	1.17	0	0	100%												
Uncontrolled Potential Emissions:															6.50	5.97														
Control Efficiency:															n/a	95%														
Controlled Emissions:															n/a	0.30														

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = Density (lb/gal) * Weight % Organics * 1/(1-Volume % water)
Pounds of VOC per Gallon Coating = Density (lb/gal) * Weight % Organics
PTE of VOC (lbs/hour) = Pounds of VOC/Gallon coating (lb/gal) * Maximum Usage Rate (gal/hr)
PTE of VOC (lbs/day) = Pounds of VOC/Gallon coating (lb/gal) * Maximum Usage Rate (gal/hr) * 24 hours/day
PTE of VOC (tons/year) = Pounds of VOC per Gallon coating (lb/gal) * Maximum Usage Rate (gal/hr) * 8760 hours/year * 1 ton/2000 lbs
PTE of PM/PM10 (tons/year) = Maximum Usage Rate (gal/hr) * Density (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer Efficiency %) * 8760 hours/year * 1 ton/2000 lbs
PTE of PM/PM10 (lbs/hour) = Maximum Usage Rate (gal/hr) * Density (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer Efficiency %)
^a Actual VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Maximum Usage Rate (gal/hr) * Actual hours of operation per day (hrs)
^b Actual VOC tons per year = Pounds of VOC per Gallon coating (lb/gal) * Maximum Usage Rate (gal/hr) * Actual hours of operation per day (hrs) * (365 days/yr) * (1 ton/2000 lbs)
Total = Worst Case Coating + Sum of all solvents used
Total State Potential Emissions = Sum of Totals from each Operation

NOTES

* PM, PM10, and PM 2.5 emissions are assumed equal.
** Coatings are applied using HVLP guns. The transfer efficiency is from AP-42, Table 4.2.2.11-1. (AP-42, 01/95). All units are controlled by dry filters.
***Based on MSDSs submitted by the source, the following applies:
All parts washers at the facility use a water-based alkaline solvent (CEFA-KLEEN 5378). Therefore, no VOC or HAP emissions are expected from the use of the solvent.
The Red Oxide Primer currently being used in Paint Booths PB1-PB3 does not contain any HAPs.
The Solvent (S-1015) currently being used in the molding operations does not contain any HAPs.
The Aqualock 6000 adhesive currently being used in the light rail booth (PB4) does not contain any HAPs and water is used as a cleanup solvent.

**Appendix A: Emissions Calculations
Hazardous Air Pollutant (HAP) Emissions
From the Surface Coating and Shoe Cell Assembly Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Material	Density (lb/gal)	Max Usage Rate (gal/hr)	Weight % Ethylbenzene	Weight % Methanol	Weight % Methyl isobutyl ketone	Weight % Napthalene	Weight % Xylene	Potential Emissions (Tons/Year)					Total HAPs
								Ethylbenzene	Methanol	Methyl isobutyl ketone	Napthalene	Xylene	
Brake Assembly & Brake Parts Manufacturing Line - Surface Coating													
Paint Booth #1 (PB1)													
Red Oxide Primer*	10.21	1.33	0%	0%	0%	0%	0%	0	0	0	0	0	0
P1004 Black Gloss H/S H/F ACR ENA	8.11	0.33	0%	0%	0%	0.4%	0%	0	0	0	0.047	0	0.047
KRYLON® PAINT ALL® Fast Dry Enamel	6.59	0.03	3%	0%	0%	0%	18%	0.022	0	0	0	0.130	0.152
Clean-up Solvent (Xylene)	7.18	0.0039	0%	0%	0%	0%	100%	0	0	0	0	0.123	0.123
Worst Paint + Enamel + Clean-up Solvent								0.022	0	0	0	0.253	0.321
Light Rail Paint Booth (PB4)													
Aqualock 6000*	8.70	0.102	0%	0%	0%	0%	0%	0	0	0	0	0	0
Shoe Cell Assembly Operations - Permafuse Oven (OV2)													
Denatured Alcohol	6.61	0.0013	0%	55%	4%	0%	0%	0	0.021	0.002	0	0	0.022
Clutch Parts Manufacturing Line - Closed/Compression Molding													
Solvent (S-1015)*	7.39	0.0361	0%	0%	0%	0%	0%	0	0	0	0	0	0
Total "Worst Case" Uncontrolled Potential Emissions								0.02	0.021	0.002	0.05	0.25	0.34

METHODOLOGY

PTE of HAP (tons/year) = Density (lb/gal) * Maximum Throughput (units/hour) * Maximum Usage (gal/unit) * Weight % HAP * 8760 hours/year * 1 ton/2000 lbs

NOTES

*Based on MSDSs submitted by the source, the following applies:

All parts washers at the facility use a water-based alkaline solvent (CEFA-KLEEN 5378). Therefore, no VOC or HAP emissions are expected from the use of the solvent.

The Red Oxide Primer currently being used in Paint Booths PB1-PB3 does not contain any HAPs.

The Solvent (S-1015) currently being used in the molding operations does not contain any HAPs.

The Aqualock 6000 adhesive currently being used in the light rail booth (PB4) does not contain any HAPs and water is used as a cleanup solvent.

Appendix A: Emissions Calculations
Volatile Organic Compound (VOC) and Hazardous Air Pollutant (HAP) Emissions
Brake Assembly & Brake Parts Manufacturing Line - Shoe Cell Assembly Operations - Permafuse Oven (OV2)

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Hazardous Air Pollutant (HAP) Emissions

Material	Max Usage Rate * (lbs/hr)	Weight % Formaldehyde	Weight % Phenol	Formaldehyde Emissions (ton/yr)	Phenol Emissions (ton/yr)
Bonding Film*	0.22	1.00	1.00	0.96	0.96
Total Single HAPs				0.96	0.96
Total Combined HAPs					1.93

Volatile Organic Compound (VOC) Emissions

Material	Max Usage Rate * (lbs/hr)	Weight % VOC Compounds	Uncontrolled VOC Emission Rate (lbs/hr)	Uncontrolled VOC Emission Rate (tons/yr)
Bonding Film*	0.22	2.00	0.44	1.93
Total VOCs			0.44	1.93

*Bonding film is a solid film that is applied between two metal parts and then heated.

METHODOLOGY

PTE of Single HAP (tons/year) = Maximum Usage rate (lbs/hr) * % HAP Content * 8760 hrs/yr * 1 ton/2000 lbs
 Total Combined HAP (tons/year) = SUM (PTE of Single HAP (tons/year))
 Weight % VOC = SUM (Weight % Formaldehyde + Weight % Phenol)
 PTE of VOC (lbs/hr) = Maximum Usage rate (lbs/hr) * Weight % VOC
 PTE of VOC (tons/yr) = PTE of VOC (lbs/hr) * (8760 hours/1 year) *(1 ton/2000 lbs)

NOTES

Particulate emissions from the Brake Assembly & Brake Parts Manufacturing Line - Shoe Cell Assembly Operations - Permafuse Oven (OV2) operations are negligible.

Appendix A: Emission Calculations
Volatile Organic Compound (VOC) and Hazardous Air Pollutant (HAP) Emissions
from the Clutch Parts Manufacturing Line - Closed/Compression Molding

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Hazardous Air Pollutant (HAP) Emissions

Material	Max Usage Rate * (lbs/hr)	Max Usage Rate * (tpy)	Phenol EF (lb/ton) ^a	Formaldehyde EF (lb/ton) ^a	Acrylonitrile EF ^a (lb/ton)	Butadiene EF ^a (lb/ton)	Phenol Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Acrylonitrile Emissions (ton/yr)	Butadiene Emissions (ton/yr)
Friction Material (worst case from NF-718 & NF 794)	250.0	1,095.0	0.880	0.020	0.080	0.010	0.48	0.01	0.04	0.01
Friction Material Handling (worst case from NF-419, NF-782, NF-787, NF-794, and NF-817)	200.0	876.0	0.880	0.020	0.080	0.010	0.39	0.01	0.04	0.00
Total Single HAPs							0.87	0.02	0.08	0.01
Total Combined HAPs							0.98			

Volatile Organic Compound (VOC) Emissions

Material	Max Usage Rate * (lbs/hr)	Max Usage Rate * (tpy)	Emission Factor ^b (lbs/ton)	Uncontrolled VOC Emission Rate (lbs/hr)	Uncontrolled VOC Emission Rate (tons/yr)
Friction Material (worst case from NF-718 & NF 794)	250.0	1,095.0	1.238	0.15	0.68
Friction Material Handling (worst case from NF-419, NF-782, NF-787, NF-794, and NF-817)	200.0	876.0	1.238	0.12	0.54
Total VOCs				0.28	1.22

METHODOLOGY

PTE of VOC (lbs/hr) = Emission Factor (lbs/ton) * Capacity (lbs/hr) * (1 ton/2000 lbs)
 PTE of VOC (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)
 PTE of HAP (tons/year) = Maximum Throughput (tons/year) * Emission Factor (lb/ton) * 1 ton/2000 lbs

NOTES

* The maximum usage rate of the friction material is limited by the maximum capacity of the mixer M1 and mixer M2.
^a No AP 42 emission factors exist for Closed/Compression Molding Operations; therefore, Hazardous Air Pollutant (HAP) and Volatile Organic Compound (VOC) Emissions from the Clutch Parts Manufacturing Line's Closed/Compression Molding operations were characterized using emission factors developed for a similar operation installed at the source's heavy-duty truck brake lining manufacturing facility located in South Hill, Virginia.
 The site-specific emission factors used for estimating the emission rates of VOC, phenol, formaldehyde, butadiene and acrylonitrile from the closed/compression molding presses were taken from a Virginia Department of Environmental Quality (Virginia DEQ) memorandum from Mr. Matthew Biesterveld of the South Central Regional Office, dated December 15, 2004. The data used in that memo were taken from a test report generated on September 18, 1997. The source submitted stack test results verifying the factors on 9/17/2010 and IDEM accepted the results on 8/24/2011.

^b Since each of the above listed HAPs are also VOCs, the VOC emission factor used to calculate emissions from the Clutch Parts Manufacturing Line's Closed/Compression Molding operations was generated by adding a safety factor of 25% to the sum of the individual HAP emission factors.

Particulate emissions from the Clutch Parts Manufacturing Line's Closed/Compression Molding operations are negligible.

**Appendix A: Emission Calculations
Particulate Emissions (PM)
from the Machining Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Emission Unit (Unit ID)	Control Device	Maximum Capacity (lbs/hr)	Control Efficiency (%)	Pollutant	Emission Factor ^a (lbs/ton)	Emission Rate before Controls (lbs/hr)	Emission Rate before Controls (tons/yr)	Emission Rate after Controls (lb/hr)	Emission Rate after Controls (tons/yr)
Metal Machining									
Vertical Turret Lathe M1900 (LM3)	BH5	250.0	98.0%	PM	17.0	2.125	9.308	0.0425	0.1862
				PM10*	1.7	0.213	0.931	0.0043	0.0186
Total					PM	2.125	9.308	0.043	0.186
					PM10	0.213	0.931	0.004	0.019
Friction Material Machining									
Cutting Machine (C1)	BH2	75.0	99.0%	PM	17.0	0.638	2.792	0.0064	0.0279
				PM10	1.7	0.064	0.279	0.0006	0.0028
Slitting Machine (S1)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.0170	0.0745
				PM10	1.7	0.170	0.745	0.0017	0.0074
Drum Slitter (S6)**	BH6	200.00	99.0%	PM	17.0	1.70	7.446	0.0170	0.0745
				PM10*	1.7	0.17	0.745	0.0017	0.0074
Drill Machine (D1)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.0170	0.0745
				PM10	1.7	0.170	0.745	0.0017	0.0074
Saw Machine (SW1)	BH6	75.0	99.0%	PM	17.0	0.638	2.792	0.0064	0.0279
				PM10	1.7	0.064	0.279	0.0006	0.0028
Drill Machine (D2)	BH2	200.0	99.0%	PM	17.0	1.700	7.446	0.0170	0.0745
				PM10	1.7	0.170	0.745	0.0017	0.0074
Slotting Machine (S3)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.0170	0.0745
				PM10	1.7	0.170	0.745	0.0017	0.0074
CNC Bridge Mill Machine (BM1)	BH2	200	99.0%	PM	17.0	1.70	7.45	0.02	0.07
				PM10*	1.70	1.70	7.45	0.02	0.07
Total					PM	11.48	50.26	0.11	0.50
					PM10	2.68	11.73	0.03	0.12

Methodology

^a EPA WebFIRE PM and PM10 emission factors for Grey Iron Foundries - Grinding/Cleaning (Table 12.10-7, SCC#30400340); and
Emission Rate for PM and PM10 before controls (lbs/hr) = Emission Factor (lbs/ton) * Capacity (lbs/hr) * (1 ton/2000 lbs)
Emission Rate for PM and PM10 before controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)
Emission Rate for PM and PM10 after controls (lbs/hr) = Emission Rate (lbs/hr) before controls * (1-control efficiency)
Emission Rate for PM and PM10 after controls (tons/yr) = Emission Rate after controls (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)

Notes

* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

* PM 2.5 emissions are assumed equal to PM10 emissions.

**Added as part of SPR 105-37848-00013

**Appendix A: Process Particulate Emissions
Potential Metal Hazardous Air Pollutant Process Emissions (MHAP)
from the Machining Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Unit ID	Control Device	* Total Uncontrolled Potential Particulate (PM) (tons/yr)	Weight % Chromium Compounds	Weight % Lead Compounds	Weight % Manganese Compounds	Weight % Nickel Compounds	Chromium Compounds Emissions (ton/yr)	Lead Compounds Emissions (ton/yr)	Manganese Compounds Emissions (ton/yr)	Nickel Compounds Emissions (ton/yr)
Brake Assembly & Brake Parts Manufacturing Line										
Vertical Turret Lathe M1900 (LM3)	BH5	9.308	12.00%	0.70%	10.00%	10.00%	1.117	0.065	0.931	0.931
Total Uncontrolled Potential Emissions (tons/yr)							1.12	0.07	0.93	0.93
Control Efficiency (%)							98%	98%	98%	0.98
Controlled Potential Emissions (tons/year)							0.022	0.001	0.019	0.02

Methodology:

Uncontrolled Potential Emissions (tons/yr) = Total Potential Particulate (tons/yr) * Weight % Metal HAP
 Controlled Potential Emissions (tons/yr) = Uncontrolled Potential Emissions (tons/yr) *(1 - Control Efficiency (%))

Total Combined HAPs (tons/yr)	3.04
Controlled Potential Emissions (tons/year)	0.06

Notes:

Total emissions based on rated capacity at 8,760 hours/year.

* The Total Uncontrolled Potential Particulate (PM) Process Emissions from the Metal Machining Operations, taken from page 8 of 14, of this Appendix.

Potential emissions for the metallic HAPs, including: Chromium, Lead, Manganese and Nickel, were determined using a "worst case" content from the various materials used by the source, taken from MSDSs provided by the source.

> Metal HAPS, including Cadmium, Chromium, Lead, Manganese and Nickel, are particulate in nature and can be controlled using a control device.

The clutch parts manufacturing line, expander tubes, and OHDB/Light Rail Manufacturing machining operations do not generate HAPs emissions.

**Appendix A: Emission Calculations
Particulate Emissions (PM)
from the Grinding Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Unit ID	Control Device	Maximum Capacity (lbs/hr)	Control Efficiency (%)	Pollutant	Emission Factor ^a (lbs/ton)	Emission Rate before Controls (lbs/hr)	Emission Rate before Controls (tons/yr)	Emission Rate after Controls (lb/hr)	Emission Rate after Controls (tons/yr)
Metal Grinding and Finishing									
Grinder M1796 (G1)	BH3	0.50	98.0%	PM	17.0	4.25E-03	0.019	8.50E-05	3.72E-04
				PM10*	1.7	4.25E-04	0.002	8.50E-06	3.72E-05
Grinder M1797 (G2)	BH4	0.50	98.0%	PM	17.0	4.25E-03	0.019	8.50E-05	3.72E-04
				PM10*	1.7	4.25E-04	0.002	8.50E-06	3.72E-05
Total					PM	8.50E-03	0.037	1.70E-04	7.45E-04
					PM10	8.50E-04	3.72E-03	1.70E-05	7.45E-05
Friction Material Grinding and Finishing									
Sander (S2)	BH2	75.0	99.0%	PM	17.0	0.638	2.792	6.38E-03	0.028
				PM10*	1.7	0.064	0.279	6.38E-04	2.79E-03
Vertical Belt Sander (S4)	BH6	75.0	99.0%	PM	17.0	0.638	2.792	0.0064	0.028
				PM10*	1.7	0.064	0.279	0.001	0.003
Sander (S5)	BH2	75.0	99.0%	PM	17.0	0.638	2.792	0.006	0.028
				PM10*	1.7	0.064	0.279	6.38E-04	2.79E-03
Grinder (G3)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.017	0.074
				PM10*	1.7	0.170	0.745	1.70E-03	7.45E-03
Grinder (G4)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.0170	0.074
				PM10*	1.7	0.170	0.745	0.002	0.007
Grinder (G5)	BH2	100.0	99.0%	PM	17.0	0.850	3.723	0.009	0.037
				PM10*	1.7	0.085	0.372	8.50E-04	3.72E-03
Grinder (G6)	BH6	100.0	99.0%	PM	17.0	0.850	3.723	0.0085	0.037
				PM10*	1.7	0.085	0.372	0.001	0.004
Grinder (G7)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.017	0.074
				PM10*	1.7	0.170	0.745	1.70E-03	7.45E-03
Grinder (G8)	BH6	200.0	99.0%	PM	17.0	1.700	7.446	0.017	0.074
				PM10*	1.7	0.170	0.745	1.70E-03	7.45E-03
Drum Grinder (G9)	BH2	200.0	99.0%	PM	17.0	1.700	7.446	0.017	0.074
				PM10*	1.7	0.170	0.745	1.70E-03	7.45E-03
Burr-Moore Grinder (G10)	BH2	75.0	99.0%	PM	17.0	0.638	2.792	0.006	0.028
				PM10*	1.7	0.064	0.279	6.38E-04	2.79E-03
Total					PM	12.75	55.85	0.13	0.56
					PM10	1.28	5.58	0.01	0.06

Methodology

^a EPA WebFIRE PM and PM10 emission factors for Grey Iron Foundries - Grinding/Cleaning (Table 12.10-7, SCC#30400340); and
Emission Rate for PM and PM10 before controls (lbs/hr) = Emission Factor (lbs/ton) * Capacity (lbs/hr) * (1 ton/2000 lbs)
Emission Rate for PM and PM10 before controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)
Emission Rate for PM and PM10 after controls (lbs/hr) = Emission Rate (lbs/hr) before controls * (1-control efficiency)
Emission Rate for PM and PM10 after controls (tons/yr) = Emission Rate after controls (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)

Notes

* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.
* PM 2.5 emissions are assumed equal to PM10 emissions.

**Appendix A: Process Particulate Emissions
Potential Metal Hazardous Air Pollutant Process Emissions (MHAP)
from the Grinding Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Unit ID	* Total Uncontrolled Potential Particulate (PM) (tons/yr)	Weight % Chromium Compounds	Weight % Lead Compounds	Weight % Manganese Compounds	Weight % Nickel Compounds	Chromium Compounds Emissions (ton/yr)	Lead Compounds Emissions (ton/yr)	Manganese Compounds Emissions (ton/yr)	Nickel Compounds Emissions (ton/yr)
Brake Assembly & Brake Parts Manufacturing Line									
Grinder M1796 (G1) controlled by baghouse (BH3)	0.0186	12.00%	0.70%	10.00%	10.00%	2.23E-03	1.30E-04	1.86E-03	1.9E-03
Grinder M1797 (G2) controlled by baghouse (BH4)	0.0186	12.00%	0.70%	10.00%	10.00%	2.23E-03	1.30E-04	1.86E-03	1.9E-03
Total Uncontrolled Potential Emissions (tons/yr)						4.47E-03	2.61E-04	3.72E-03	3.72E-03
Control Efficiency (%)						98%	98%	98%	98%
Controlled Potential Emissions (tons/year)						8.94E-05	5.21E-06	7.45E-05	7.45E-05

Methodology:

Uncontrolled Potential Emissions (tons/yr) = Total Potential Particulate (tons/yr) * Weight % Metal HAP

Controlled Potential Emissions (tons/yr) = Uncontrolled Potential Emissions (tons/yr) *(1 - Control Efficiency (%))

Total Combined HAPs (tons/yr)	0.01
Controlled Potential Emissions (tons/year)	2.43E-04

Notes:

Total emissions based on rated capacity at 8,760 hours/year.

* Total Uncontrolled Potential Particulate (PM) Process Emissions from the Metal Grinding Operations, taken from page 10 of 14, of this Appendix.

Potential emissions for the metallic HAPs, including: Chromium, Lead, Manganese and Nickel, were determined using a "worst case" content from the various materials used by the source, taken from MSDSs provided by the source.

> Metal HAPS, including Cadmium, Chromium, Lead, Manganese and Nickel, are particulate in nature and can be controlled using a control device. The clutch parts manufacturing line, expander tubes, and OHDB/Light Rail Manufacturing grinding operations do not generate HAPs emissions.

**Appendix A: Emission Calculations
Particulate and HAP Emissions from
Blasting Operations**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Emission Unit	Amount of Material Collected (lbs/hr)*	Unlimited Potential to Emit PM/PM10/PM2.5 (tons/yr)**	Dust Collector Control Efficiency (%)	Potential to Emit After Control (lbs/hr)	Potential to Emit After Control (tons/yr)	Weight % Manganese	Potential to Emit Manganese (tons/yr)
Light Rail Blaster (BL1)	2.44	10.80	99.0%	0.024	0.11	0.60%	0.06
Tool Room Blast Cabinet (BL2)	2.27	10.04	99.0%	0.023	0.10	0%	0.00
Friction Blast Cabinet (BL3)	2.64	11.68	99.0%	0.026	0.12	0%	0.00
Total PTE		32.52		0.07	0.33		0.06

Methodology

* Amount of material collected in the dust collector provided by the source.

** The grit blaster consists of a cyclone separator and dust collector. The cyclone separator has been determined to be integral to the process, so the unlimited potential to emit will be determined after the cyclone but before the dust collector.

Unlimited PTE PM/PM10 (tons/yr) = (Amount of Material Collected (lbs/hr)/Control Efficiency (%)) * 8,760 (hrs/yr) * 1/2000 (ton/lbs)

PTE After Control (lbs/hr) = Amount of Material Collected (lbs/hr) * (1 - % Control Efficiency)

PTE After Control (tons/yr) = Amount of Material Collected (lbs/hr) * (1 - % Control Efficiency) * 8,760 (hrs/yr) * 1/2000 (ton/lbs)

PTE Manganese (tons/yr) = Unlimited PTE PM/PM10 (tons/yr) * Weight % Manganese

Appendix A: Emission Calculations
Particulate Emissions (PM)
from the Clutch Parts Manufacturing Line - Material Handling

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Unit ID	Maximum Capacity * (lbs/hr)	Pollutant	Emission Factor (lbs/ton) ^α	Emission Rate Uncontrolled (lbs/hr)	Emission Rate Uncontrolled (tons/yr)
Friction Material Handling (NF-718 and NF-794)	250.0	PM	0.220	0.0275	0.120
		PM10*	0.078	0.0098	0.043
Friction Material Handling (NF-419, NF-782, NF-787, NF-794, and NF-817)*	200.0	PM	0.220	0.0220	0.096
		PM10*	0.078	0.0078	0.034

*Added as part of SPR 105-37848-00013

Total PM:	0.22
Total PM10:	0.08

Methodology

* The maximum capacity of the friction material handling operation is limited by the maximum capacity of each mixer (M1 and M2).

^α No AP42 emission factors exist for the loading and unloading of friction materials into the mixer, therefore, for a conservative estimate the EPA WebFire PM and PM10 emission factors for Mineral Products, Concrete Batching, Mixer loading of cement/sand/aggregate (SCC 3-05-011-09) were used.

Emission Rate for PM and PM10 before controls (lbs/hr) = Maximum Capacity (lbs/hr) * Emission Factor (lbs/ton) * (1 ton/2000 lbs)

Emission Rate for PM and PM10 before controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)

Emission Rate for PM and PM10 after controls (lbs/hr) = Emission Rate before controls (lbs/hr) * (1-control efficiency)

Emission Rate for PM and PM10 after controls (tons/yr) = Emission Rate after controls (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)

Notes

* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10

* PM 2.5 emissions are assumed equal to PM10 emissions.

**Appendix A: Emission Calculations
Particulate (PM) and Volatile Organic Compound (VOC) Emissions
from the Clutch Parts Manufacturing Line - Material Mixing**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Particulate emissions from mixing

Unit ID	Control Device	Maximum Capacity (lbs/hr)	Control Efficiency (%)	Pollutant	Emission Factor (lbs/ton) ^a	Emission Rate before Controls (lbs/hr)	Emission Rate before Controls (tons/yr)	Emission Rate after Controls (lb/hr)	Emission Rate after Controls (tons/yr)
Mixer (M1)	BH1	250.0	99.00%	PM	0.60	0.0750	0.329	7.50E-04	3.29E-03
				PM10*	0.30	0.0375	0.164	3.75E-04	1.64E-03
Mixer (M2)**	BH1	200.0	99.00%	PM	0.60	0.0600	0.263	6.00E-04	2.63E-03
				PM10*	0.30	0.0300	0.131	3.00E-04	1.31E-03

Total PM:	0.59	5.91E-03
Total PM10:	0.30	2.96E-03

Methodology

^a No AP42 emission factors exist for the mixing of friction materials, therefore, for a conservative estimate the EPA WebFIRE PM and PM10 emission factors for Fiberglass Manufacturing - Raw material: Mixing/Weighing (SCC 30501223) were used.

Emission Rate for PM and PM10 before controls (lbs/hr) = Maximum Capacity (lbs/hr) * Emission Factor (lbs/ton) * (1 ton/2000 lbs)

Emission Rate for PM and PM10 before controls (tons/yr) = Emission Rate (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)

Emission Rate for PM and PM10 after controls (lbs/hr) = Emission Rate before controls (lbs/hr) * (1-control efficiency)

Emission Rate for PM and PM10 after controls (tons/yr) = Emission Rate after controls (lbs/hr) * (8760 hours/1 year) * (1 ton/2000 lbs)

Notes

* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant". US EPA has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions.

* PM 2.5 emissions are assumed equal to PM10 emissions.

**Added as part of SPR 105-37848-00013

VOC emissions from mixing

Unit ID	Solvent	Density (lb/gal)	Solvent volume per batch (gal/batch)	Solvent emitted per batch (lbs/batch)	# of presses	Production rate per press (units/hr)	Total production (units/yr)	Maximum product weight (grams/unit)	Maximum material weight (lbs/yr)	Material weight per batch (lbs/batch)	Maximum # batches per year	Uncontrolled VOC (tpy)	Limited VOC (TPY)*
Mixer (M2)*	S-1015	7.39	28	206.92	8	5	350,400	240	185,397	700	265	27.4	24.99

Note: Only Mixer (M2) uses solvent, Mixer (M1) is not physically capable of running solvent, and is also not piped for the wet mix. This information provided by the source.

*Added as part of SPR 105-37848-00013

Methodology

According to the MSDS, this solvent contains no HAPs.

Density of solvent from MSDS.

Information provided by the source: solvent volume per batch (gal), # of presses, production rate per press (units/hr), maximum product weight (grams), material weight per batch (lbs)

Solvent emitted per batch (lbs) = solvent density (lbs/gal) * solvent volume per batch (gal)

It is assumed that all solvent is evaporated and thus emitted during the mixing process leaving a dry mixture which is subsequently formed into friction products via a compression molding process in the eight (8) Clutch Lining Presses (emission units PR1-PR8).

total production (units/yr) = # of presses * production rate per press (units/hr) * 24 hours/day * 365 days/year

maximum material weight (lbs/yr) = total production (units/yr) * maximum product weight (grams) / 453.6 grams/lb

maximum # batches per year = maximum material weight (lbs/yr) * material weight per batch (lbs)

VOC (tpy) = maximum # batches per year * solvent emitted per batch (lbs) / 2000 lbs/ton

*With Minor Permit Revision (MPR) 105-34942-00013, the source provided information to show that the actual emissions have always been less than 25 tons per year VOC from Mixer M2 solvent usage. Therefore, the source can take an enforceable limitation of 24.99 tons per year VOC input to Mixer M2 in order to render the requirements of 326 IAC 8-1-6 not applicable.

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Combustion Source	Unit ID	# of units	Heat Input per unit (MMBtu/hr)	Total Heat Input (MMBtu/hr)
Boiler	B1	1	12.56	12.56
Boiler	B2	1	12.56	12.56
Hot Water Boiler	HWB1	1	0.34	0.34
Paint Drying Oven (OV1)	OV1	1	1.00	1.00
Permafuse Oven (OV2)	OV2	1	0.80	0.80
Heat Treat Oven	OV7	1	0.60	0.60
Hot Water Boiler	HWB2	1	0.34	0.34
Mix Room AMU	AMU1	1	2.02	2.02
Friction Area AMU	AMU2, AMU3	2	3.62	7.24
Aqua Master Parts Washer				
Pre-wash Burner	PW1	1	0.27	1.49
Dip Stage Burner		1	0.70	
Rinse Stage Burner		1	0.27	
Blow-off Stage Burner		1	0.25	
Totals:		14	35.34	38.96

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf 1000	Potential Throughput MMCF/yr
39.0		341.3

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx 100 **see below	VOC	CO
	1.9	7.6	7.6	0.6		5.5	84
Potential Emission in tons/yr	0.32	1.30	1.30	0.10	17.06	0.94	14.33

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
 PM2.5 emission factor is filterable and condensable PM2.5 combined.
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
 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

	HAPs - Organics				
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.10E-03	1.20E-03	7.50E-02	1.80E+00	3.40E-03
Potential Emission in tons/yr	3.6E-04	2.0E-04	1.3E-02	0.31	5.8E-04

	HAPs - Metals				
	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	5.00E-04	1.10E-03	1.40E-03	3.80E-04	2.10E-03
Potential Emission in tons/yr	8.5E-05	1.9E-04	2.4E-04	6.5E-05	3.6E-04

Total HAPs **0.32** tons/yr

Worst Single HAP (hexane) **0.31** tons/yr

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

	Greenhouse Gas		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120,000	2.3	2.2
Potential Emission in tons/yr	20,475	0.4	0.4
Summed Potential Emissions in tons/yr	20,476		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	20,597		

Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton
 CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Combustion Source	Unit ID	# of units	Heat Input per unit (MMBtu/hr)	Total Heat Input (MMBtu/hr)
Hot Water Boiler	HWB3	1	0.076	0.076
Batch Oven	OV11	1	0.50	0.50
Totals:		2	0.58	0.58

Heat Input Capacity MMBtu/hr	HHV mmBtu mmscf	Potential Throughput MMCF/yr
0.58	1020	4.9

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.00	0.02	0.02	0.00	0.25	0.01	0.21

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
 PM2.5 emission factor is filterable and condensable PM2.5 combined.
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
 Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu
 Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					Total - Organics
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	5.2E-06	3.0E-06	1.9E-04	0.00	8.4E-06	0.00

	HAPs - Metals					Total - Metals
	Lead	Cadmium	Chromium	Manganese	Nickel	
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	1.2E-06	2.7E-06	3.5E-06	9.4E-07	5.2E-06	1.4E-05
					Total HAPs	0.00
					Worst HAP	0.00

Methodology is the same as above.
 The five highest organic and metal HAPs emission factors are provided above.
 Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations
 Reciprocating Internal Combustion Engines - Diesel Fuel
 Output Rating (<=600 HP)
 Maximum Input Rate (<=4.2 MMBtu/hr)**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Output Horsepower Rating (hp)	86.0
Maximum Hours Operated per Year	500
Potential Throughput (hp-hr/yr)	43,000

	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/hp-hr	0.0022	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	0.05	0.05	0.05	0.04	0.67	0.05	0.14

*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.

Hazardous Air Pollutants (HAPs)

	Pollutant							
	Benzene	Toluene	Xylene	1,3-Butadiene	Formaldehyde	Acetaldehyde	Acrolein	Total PAH HAPs***
Emission Factor in lb/hp-hr****	6.53E-06	2.86E-06	2.00E-06	2.74E-07	8.26E-06	5.37E-06	6.48E-07	1.18E-06
Potential Emission in tons/yr	1.4E-04	6.2E-05	4.3E-05	5.9E-06	1.8E-04	1.2E-04	1.4E-05	2.5E-05

***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)	5.8E-04
---	----------------

Green House Gas Emissions (GHG)

	Pollutant		
	CO2	CH4	N2O
Emission Factor in lb/hp-hr	1.15E+00	4.63E-05	9.26E-06
Potential Emission in tons/yr	25	9.95E-04	1.99E-04

Summed Potential Emissions in tons/yr	25
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	25

Methodology

Emission Factors are from AP42 (Supplement B 10/96), Tables 3.3-1 and 3.3-2

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 (25) + N2O

Potential Emission ton/yr x N2O GWP (298).

**Appendix A: Emission Calculations
Reciprocating Internal Combustion Engines - Natural Gas
2-Stroke Lean-Burn (2SLB) Engines**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Maximum Heat Input Capacity (MMBtu/hr)	0.42
Maximum Hours Operated per Year (hr/yr)	500
Potential Fuel Usage (MMBtu/yr)	210
High Heat Value (MMBtu/MMscf)	1020
Potential Fuel Usage (MMcf/yr)	0.21

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor (lb/MMBtu)	3.84E-02	4.83E-02	4.83E-02	5.88E-04	3.17E+00	1.20E-01	3.86E-01
Potential Emissions (tons/yr)	0.004	0.01	0.01	6.2E-05	0.33	0.01	0.04

*PM emission factor is for filterable PM-10. PM10 emission factor is filterable PM10 + condensable PM.
 PM2.5 emission factor is filterable PM2.5 + condensable PM.

Hazardous Air Pollutants (HAPs)

Pollutant	Emission Factor (lb/MMBtu)	Potential Emissions (tons/yr)
Acetaldehyde	7.76E-03	8.1E-04
Acrolein	7.78E-03	8.2E-04
Benzene	1.94E-03	2.0E-04
1,3-Butadiene	8.20E-04	8.6E-05
Ethylbenzene	1.08E-04	1.1E-05
Formaldehyde	5.52E-02	0.006
Methanol	2.48E-03	2.6E-04
Methylene Chloride	1.47E-04	1.5E-05
Hexane	4.45E-04	4.7E-05
Toluene	9.63E-04	1.0E-04
2,2,4-Trimethylpentane	8.46E-04	8.9E-05
Total PAH**	1.34E-04	1.4E-05
Total		0.01

HAP pollutants consist of the twelve highest HAPs included in AP-42 Table 3.2-1.

**PAH = Polyaromatic Hydrocarbon (PAHs are considered HAPs, since they are considered Polycyclic Organic Matter)

Methodology

Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-1

Potential Fuel Usage (MMBtu/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [Maximum Hours Operating per Year (hr/yr)]

Potential Emissions (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2000 lb/ton]

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMBtu*	110	1.25	
Emission Factor in lb/MMcf**			2.2
Potential Emission in tons/yr	11.55	0.13	0.00
Summed Potential Emissions in tons/yr	11.68		
CO2e Total in tons/yr based on 11/29/2013 federal GWPs	14.90		

Methodology

*The CO2 and CH4 emission factors are from Emission Factors are from AP-42 (Supplement F, July 2000), Table 3.2-2

**The N2O emission factor is from AP 42, Table 1.4-2. The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64. Global Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.

For CO2 and CH4: Emission (tons/yr) = [Potential Fuel Usage (MMBtu/yr)] * [Emission Factor (lb/MMBtu)] / [2,000 lb/ton]

For N2O: Emission (tons/yr) = [Potential Fuel Usage (MMCF/yr)] * [Emission Factor (lb/MMCF)] / [2,000 lb/ton]

CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (25) + N2O Potential Emission ton/yr x N2O GWP

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 SO2 = Sulfur Dioxide

NOx = Nitrous Oxides
 VOC = Volatile Organic Compounds
 CO = Carbon Monoxide

CO2 = Carbon Dioxide
 CH4 = Methane
 N2O = Nitrous Oxide
 CO2e = CO2 equivalent emissions

**Appendix A: Emissions Calculations
Welding and Thermal Cutting**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)	EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
			PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING											
Metal Inert Gas (MIG)(carbon steel)	1	0.02	0.0055	0.0005			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	1	0.02	0.0055	0.0005			0.000	0.000	0.000	0	0.000
EMISSION TOTALS											
Potential Emissions lbs/hr							0.00	0.00	0.00	0.00	0.00
Potential Emissions lbs/day							0.01	0.00	0.00	0.00	0.00
Potential Emissions tons/year							9.64E-04	8.76E-05	0.00	0.00	0.00

Methodology:

*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

**Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

**Appendix A: Emission Calculations
Solvent Tank**

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Product Stored	Maximum Liquid Volume (gallons)	Turnovers per year	Product Throughput (gallons/yr)	VOC Working Losses (lbs/yr)	VOC Breathing Losses (lbs/yr)	Total VOC Losses (lbs/yr)	VOC Working Losses (tons/yr)	VOC Breathing Losses (tons/yr)	Total VOC Losses (tons/yr)
Superior S-1015 (solvent for mixer M2)	750	9.0	6,750	5.66	4.83	10.49	2.83E-03	2.42E-03	0.01
Parts Washers (PW10-PW13)*	800	9.0	7,200	0	0.00	0.00	0.00E+00	0.00E+00	0.00
Conveyorized Part Washer (PW14)*	200	9.0	1,800	0	0.00	0.00	0.00E+00	0.00E+00	0.00

Methodology

Turnovers per year provided by the source.

Product Throughput (gallons/yr) = [Maximum Liquid Volume (gallons)] * [Turnovers per year]

VOC working losses (lbs/yr) and VOC Breathing Losses (lbs/yr) determined using US EPA TANKS Version 4.09 program

According to the MSDS, this solvent contains no HAPs.

*Parts washers use an alkalyne based, VOC free solvent

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

Company Name: Carlisle Industrial Brake & Friction
Source Address: 1031 East Hillside Drive, Bloomington, IN 47401
Permit No.: M105-35216-00013
SPR No.: 105-37848-00013
Reviewer: Dominic Williams

Paved Roads at Industrial Site

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

Vehicle Information (provided by source)

Vehicle Type	Maximum number of vehicles	Maximum number of one-way trips per day per vehicle type	Maximum trips per day (trip/day)	Maximum Weight of Vehicle (tons)	Maximum Weight of Load (tons)	Maximum Weight of Vehicle & Load (tons/trip)	Total Weight driven per day (ton/day)	Total Weight driven per year (ton/yr)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Personal Car/Truck	50.0	2.0	100.0	2.0	0.7	2.7	270.0	98,550.0	1,350.0	0.3	25.6	9,332.4
Freight Truck (6 axles)	5.0	2.0	10.0	16.0	32.0	48.0	480.0	175,200.0	1,350.0	0.3	2.6	933.2
Total			110.0			50.7	750.0	273,750.0	2,700.0	0.5	28.1	10,265.6

Average Vehicle Weight Per Trip = $\frac{6.8}{1}$ tons/trip
 Average Miles Per Trip = $\frac{0.26}{1}$ miles/trip

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

	PM	PM10	PM2.5	
where k =	0.082	0.016	0.0024	lb/mi = particle size multiplier (AP-42 Table 13.2.1-1)
W =	6.8	6.8	6.8	tons = average vehicle weight (provided by source)
C =	0.00047	0.00047	0.00036	lb/mi = emission factor for vehicle exhaust, brake wear, and tire wear (AP-42 Table 13.2.1-2)
sL =	0.6	0.6	0.6	g/m ² = Ubiquitous Baseline Silt Loading Values of paved roads (Table 13.2.1-3 for summer months)

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

Mitigated Emission Factor, $E_{ext} = E_f \cdot [1 - (p/4N)]$
 where P = $\frac{125}{365}$ days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	0.13	0.025	3.40E-03	lb/mile
Mitigated Emission Factor, $E_{ext} =$	0.12	0.022	3.11E-03	lb/mile

Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Personal Car/Truck	0.60	0.11	0.02	0.55	0.10	0.01
Freight Truck (6 axles)	0.06	0.01	0.002	0.05	0.01	0.001
Total	0.66	0.13	0.02	0.60	0.12	0.02

Methodology

Maximum trips per day (trip/day) = [Maximum number of vehicles * Maximum number of one-way trips per day per vehicle type]
 Maximum Weight of Vehicle & Load (tons/trip) = [Maximum Weight of Vehicle (tons) + Maximum Weight of Load (tons)]
 Total Weight driven per day (ton/day) = [Maximum Weight of Vehicle & Load (tons/trip)] * [Maximum trips per day (trip/day)]
 Total Weight driven per year (ton/yr) = [Maximum trips per day (trip/day)] * 365 days/yr
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Maximum one-way miles (miles/yr) = [[Maximum one-way distance (mi/day)] * 365 days/yr]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particulate Matter (<2.5 um)
 PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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(800) 451-6027 • (317) 232-8603 • www.idem.IN.gov

Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

February 6, 2017

Peggy Mullins
Carlisle Industrial Brake and Friction
920 Lake Road
Medina, OH 44256

Re: Public Notice
Carlisle Industrial Brake and Friction
Permit Level: MSOP - Significant Permit Revision
Permit Number: 105 - 37848 - 00013

Dear Peggy Mullins:

Enclosed is a copy of your draft MSOP - Significant Permit 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 The Herald Times in Bloomington, Indiana publish the abbreviated version of the public notice no later than February 10, 2017. 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 Monroe Co Public Library, 303 E Kirkwood Ave in Bloomington IN. 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 Dominic Williams, 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 4-6555 or dial (317) 234-6555.

Sincerely,
Len Pogost

Len Pogost
Permits Branch
Office of Air Quality

Enclosures
PN Applicant Cover letter 1/9/2017



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Bruno Pigott
Commissioner

ATTENTION: PUBLIC NOTICES, LEGAL ADVERTISING

February 6, 2017

The Herald Times
Attn: Classifieds
1900 South Walnut
Bloomington, Indiana 47402

Enclosed, please find one Indiana Department of Environmental Management Notice of Public Comment for Carlisle Industrial Brake and Friction, Monroe 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 February 10, 2017.

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 Len Pogost at 800-451-6027 and ask for extension 3-2803 or dial 317-233-2803.

Sincerely,

Len Pogost

Len Pogost
Permit Branch
Office of Air Quality

Permit Level: MSOP - Significant Permit Revision
Permit Number: 105 - 37848 - 00013

Enclosure

PN Newspaper.dot 1/9/2017



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Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

February 6, 2017

To: Monroe Co Public Library 303 E Kirkwood Ave Bloomington IN

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

Subject: **Important Information to Display Regarding a Public Notice for an Air Permit**

Applicant Name: Carlisle Industrial Brake and Friction
Permit Number: 105 - 37848 - 00013

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 Smiddie-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.dot 1/9/2017



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Eric J. Holcomb
Governor

Bruno L. Pigott
Commissioner

Notice of Public Comment

February 6, 2017

Carlisle Industrial Brake and Friction

105 - 37848 - 00013

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.*

Enclosure
PN AAA Cover.dot 1/9/2017

Mail Code 61-53

IDEM Staff	LPOGOST 2/6/2017 Carlisle Industrial Brake & Friction 105 - 37848 - 00013 draft)			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: CERTIFICATE OF MAILING ONLY	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handling Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Peggy Mullins Carlisle Industrial Brake & Friction 920 Lake Road Medina OH 44256 (Source CAATS)										
2		Matthew Jereb Plant Manager Carlisle Industrial Brake & Friction 1031 E Hillside Drive Bloomington IN 47401-6597 (RO CAATS)										
3		Monroe Co Public Library 303 E Kirkwood Ave Bloomington IN 47408 (Library)										
4		Monroe County Health Department 119 W 7th St Bloomington IN 47404-3989 (Health Department)										
5		Bloomington City Council and Mayors Office 401 N. Morton St. Bloomington IN 47402 (Local Official)										
6		Mr. Richard Monday 545 E. Margaret Dr. Terre Haute IN 47801 (Affected Party)										
7		Monroe County Commissioners Monroe County Courthouse, Room 322 Bloomington IN 47404 (Local Official)										
8		Matthew Ayer AYER Quality Engineering, LLC 3908 Pochontas Avenue Cincinnati OH 45227 (Consultant)										
9												
10												
11												
12												
13												
14												
15												

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is \$50,000 per piece subject to a limit of \$50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is \$500. The maximum indemnity payable is \$25,000 for registered mail, sent with optional postal insurance. See Domestic Mail Manual R900, S913, and S921 for limitations of coverage on inured and COD mail. See International Mail Manual for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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