

CONSTRUCTION PERMIT OFFICE OF AIR MANAGEMENT

**AeroForge Corporation
3901 South Delaware Drive
Muncie, Indiana 47303**

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

This permit is issued in accordance with 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Permit No.: CP 035-9563-00011	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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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 Management (OAM), and presented in the permit application.

A.1 General Information

The Permittee proposes to construct a engine parts machining, polishing, and coating operations at this plant.

Responsible Official: Gene Amick
Source Address: 3901 South Delaware Drive, Muncie, Indiana 47303
Mailing Address: 1200 W. Jackson Street, Muncie, Indiana 47303
SIC Code: 3724
County Location: Delaware
County Status: Attainment for all criteria pollutants
Source Status: Minor Source, under PSD Rules;
Minor Source, Section 112 of the Clean Air Act

A.2 Emission Units and Pollution Control Equipment Summary

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

- (1) three (3) Wheelabrator abrasive saws, and one (1) inspection booth (P.S-1), maximum capacity of 463 parts per hour, the no. 3 saw, and inspection booth controlled by a fabric filter (P.S.C-1), and exhausting at stack Pt # S1;
- (2) twelve (12) hand grind stations (P.S-2), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-2), and exhausting at stack Pt # S2;
- (3) one (1) maintenance grind station (P.S-2), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-2), and exhausting at stack Pt # S2;
- (4) one (1) lubricant surface coating booth (P.S-4) equipped with two electrostatic air atomized guns, maximum capacity of surface coating 845 parts per hour, controlled by a dry fiberglass filter (P.S.C-4), and exhausting at stack Pt # S4;
- (5) ten (10) natural gas fired rotary hearth furnaces (P.S.- 5), capacity of 8.308 MMBTU per hour each, and exhausting at stack Pt # S5;
- (6) two (2) Wheelabrator/Irvin steel shot blast machines (P.S -6) with a blast rate of 1,000 pounds per hour, maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-6)), and exhausting at stack Pt # S6;
- (7) one (1) acid bath milling operation using hydrofluoric and sulfuric acids (P.S -7), maximum capacity of 0.4 tons of acid per hour, controlled by a scrubber (P.S.C-7), and exhausting at stack Pt # S7;
- (8) one (1) forge machine (P.S -8), maximum capacity of 18.9 parts per hour, and exhausting at stack Pt # S8;

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- (9) one (1) Pangborn roto steel grit blast machines, and graphite die pattern cutting operation (P.S - 9) with a blast rate of 1,000 pounds per hour, maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-9), and exhausting at stack Pt # S9;
- (10) six (6) electrical discharge machines (EDMs) under an oil bath (P.S -10) with a oil usage rate of 2.45 pounds per hour, and exhausting at stack Pt # S10;
- (11) one (1) lime bag dumping station (P.S -11), maximum capacity of 1,500 pounds per hour, controlled by a fabric filter (P.S.C-11), and exhausting at stack Pt # S11;
- (12) one (1) molten salt bath cleaning operation with a natural gas fired 0.5 MMBTU per hour heater (P.S -12), and exhausting at stack Pt # S12;
- (13) one (1) fabric filter (P.S.C-1) with a gas flow rate of 3,000 acfm at 70⁰ F, and exhausting at stack Pt. # S1;
- (14) one (1) fabric filter (P.S.C-2) with a gas flow rate of 15,000 acfm at 70⁰ F, and exhausting at stack Pt. # S2;
- (15) one (1) dry filter (P.S.C-4) with a gas flow rate of 11,000 acfm at 70⁰ F, and exhausting at stack Pt. # S4;
- (16) one (1) fabric filter (P.S.C-6) with a gas flow rate of 3,500 acfm at 70⁰ F, and exhausting at stack Pt. # S6;
- (17) one (1) scrubber (P.S.C-7) with a gas flow rate of 10,000 acfm at 70⁰ F, and with a lime water slurry recirculation rate of 118 gallons per minute and exhausting at stack Pt. # S7;
- (18) one (1) fabric filter (P.S.C-9) with a gas flow rate of 5,250 acfm at 70⁰ F, and exhausting at stack Pt. # S9; and
- (19) one (1) fabric filter (P.S.C-11) with a gas flow rate of 1,050 acfm at 70⁰ F, and exhausting at stack Pt. # S11.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source will be required to apply for a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

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SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

Construction Conditions [326 IAC 2-1-3.2]

B.1 General Construction Conditions

- (a) The data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
- (b) This permit 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.

B.2 Effective Date of the Permit [IC 13-15-5-3] [326 IAC 2-1-9(b)]

- (a) Pursuant to IC 13-15-5-3, this section of this permit becomes effective upon its issuance.
- (b) Pursuant to 326 IAC 2-1-9(b) (Revocation of Permits), IDEM, OAM, may revoke this section of the approved permit if construction is not commenced within eighteen (18) months after receipt of this permit or if construction is suspended for a continuous period of one (1) year or more.
- (c) Notwithstanding Condition B.3, all requirements of these construction conditions shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

B.3 First Time Operation Permit [326 IAC 2-1-4]

This document shall also become the first-time operation permit for the facilities under this section of this permit, pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to:

Indiana Department of Environmental Management
Permit Administration & Development Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

verifying that the facilities were constructed as proposed in the application. The facilities covered in this section of this permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.

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

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- (c) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this permit.
- (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
- (e) Pursuant to 326 IAC 2-7-4, the Permittee shall apply for a Title V operating permit within twelve (12) months after the source becomes subject to Title V. This 12-month period starts at the postmarked submission date of the Affidavit of Construction. If the construction is completed in phases, the 12-month period starts at the postmarked submission date of the Affidavit of Construction that triggers the Title V applicability. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

Operation Conditions

B.4 General Operation Conditions

- (a) The data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
- (b) The Permittee shall 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.

B.5 Preventive Maintenance Plan [326 IAC 1-6-3]

Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:

- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
- (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
- (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

B.6 Transfer of Permit [326 IAC 2-1-6]

Pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this engine parts machining is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.

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- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

B.7 Permit Revocation [326 IAC 2-1-9(a)]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and 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 326 IAC 2-1 (Permit Review Rules).

B.8 Availability of Permit [326 IAC 2-1-3(l)]

Pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

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SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitation and Standards

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potential emissions of particulate matter (PM) and volatile organic compounds (VOC) are less than 250 tons per 365 consecutive day period. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase potential emissions to 250 tons per twelve (12) consecutive month period, from the equipment covered in this permit, shall require a PSD permit pursuant to 326 IAC 2-2, before such change may occur.

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

Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

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

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.

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

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

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

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

C.6 Operation of Equipment [326 IAC 2-8-5(a)(4)]

All air pollution control equipment listed in this permit shall be operated at all times that the emission units vented to the control equipment is in operation, as described in Section D of this permit.

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

- (a) The Permittee shall comply with the provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks S2, and S4.
- (b) Any change in an applicable stack shall require prior approval from IDEM, OAM.

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

Prior to the commencement of any demolition or renovation activities, the Permittee shall use an Indiana accredited asbestos inspector to inspect thoroughly the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material. The requirement that the inspector be accredited is federally enforceable.

Testing Requirements

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

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing methods approved by IDEM, OAM.

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

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

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

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Monitoring Requirements

C.10 Compliance Monitoring

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, no more than ninety (90) days after receipt of this permit. If due to circumstances beyond its control, this schedule cannot be met, the Permittee shall notify:

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

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in writing, no more than ninety (90) days after receipt of this permit, with full justification of the reasons for the inability to meet this date and a schedule which it expects to meet. If a denial of the request is not received before the monitoring is fully implemented, the schedule shall be deemed approved.

C.11 Monitoring Methods [326 IAC 3]

Any monitoring or testing performed to meet the requirements of this permit shall be performed, according to the provisions of 326 IAC 3 or other approved methods as specified in this permit.

C.12 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (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
 - (3) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

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- (e) Procedures for Asbestos Emission Control
The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

Corrective Actions and Response Steps

C.13 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

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

within 180 days from the date on which this source commences operation.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, then IDEM, OAM shall supply such a plan.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level. [326 IAC 1-5-3].

C.14 Compliance Monitoring Plan - Failure to Take Response Steps

- (a) The Permittee is required to implement a compliance monitoring plan to ensure that reasonable information is available to evaluate its continuous compliance with applicable requirements. This compliance monitoring plan is comprised of:

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- (1) This condition;
 - (2) The Compliance Determination Requirements in Section D of this permit;
 - (3) The Compliance Monitoring Requirements in Section D of this permit;
 - (4) The Record Keeping and Reporting Requirements in Section C (Monitoring Data Availability, General Record Keeping Requirements, and General Reporting Requirements) and in Section D of this permit; and
 - (5) A Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. CRP's shall be submitted to IDEM, OAM upon request and shall be subject to review and approval by IDEM, OAM. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee and maintained on site, and is comprised of :
 - (A) Response steps that will be implemented in the event that compliance related information indicates that a response step is needed pursuant to the requirements of Section D of this permit; and
 - (B) A time schedule for taking such response steps including a schedule for devising additional response steps for situations that may not have been predicted.
- (b) For each compliance monitoring condition of this permit, appropriate response steps shall be taken when indicated by the provisions of that compliance monitoring condition. Failure to perform the actions detailed in the compliance monitoring conditions or failure to take the response steps within the time prescribed in the Compliance Response Plan, shall constitute a violation of the permit unless taking the response steps set forth in the Compliance Response Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee is excused from taking further response steps for any of the following reasons:
- (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further response steps providing that prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for an administrative amendment to the permit, and such request has not been denied or;
 - (3) An automatic measurement was taken when the process was not operating; or
 - (4) The process has already returned to operating within "normal" parameters and no response steps are required.

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- (d) Records shall be kept of all instances in which the compliance related information was not met and of all response steps taken. In the event of an emergency, the provisions of 326 IAC 2-7-16 (Emergency Provisions) requiring prompt corrective action to mitigate emissions shall prevail.

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

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline. Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.

C.16 Pressure Gauge Specification

Whenever a condition in this permit requires the measurement of pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ($\pm 2\%$) of full scale reading.

Record Keeping and Reporting Requirements

C.17 Annual Emission Reporting [326 IAC 2-6]

That pursuant to 326 IAC 2-6 (Emission Reporting), the owner/operator of AeroForge Corporation must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

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

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

C.18 Monitoring Data Availability

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing, all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.19 General Record Keeping Requirements

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM, representative, for a minimum of three (3) years. They may be stored elsewhere for the remaining two (2) years providing they are made available within thirty (30) days after written request.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.

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- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.20 General Reporting Requirements

- (a) To affirm that the source has met all the requirements stated in this permit the source shall submit a Quarterly Compliance Report. Any deviation from the requirements and the date(s) of each deviation must be reported.
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
- (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
 - (1) An excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) Failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation.

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- (3) Failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A Permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.

- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

Stratospheric Ozone Protection

C.21 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.16

SECTION D.1

FACILITY CONDITIONS

All Emission Units Listed In Section A.2 (pages 4, and 5 of 24)

Emission Limitations and StandardsD.1.1 Volatile Organic Compound (VOC) [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations),

- (a) the volume weighted average volatile organic compound (VOC) content of coating applied to the engine parts shall be limited to 3.5 pounds of VOCs per gallon of coating less water, as delivered to the applicator for any calendar day, for forced warm air (less than 90⁰C or 194⁰F)dried coatings.
- (b) Solvent sprayed from application equipment during cleanup or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

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

The Permittee shall comply with the following PM emission limitations:

- (a) The Wheelabrator abrasive saws exhausting to stack S1, shall be limited to 1.57 pounds of PM per hour.
- (b) The H-Grind stations & M-Grind station exhausting to stack S2, shall be limited to 1.57 pounds of PM per hour.
- (c) The Wheelabrator/Irvin shot blast machines exhausting to stack S6, shall be limited 4.10 pounds of PM per hour.
- (d) The forge machine exhausting through stack S8 shall be limited to total PM emissions of 1.57 pounds per hour.
- (e) The Pangborn roto steel grit blast machines, and graphite die pattern cutting operation exhausting to stack S9 shall be limited to 2.58 pounds of PM per hour.
- (f) The lime bag dumping station exhausting to stack S11 shall be limited to 3.38 pounds of PM per hour.
- (g) The surface coating operation shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$

$$P = \text{process weight in tons per hour, if}$$

$$P \text{ is equal to or less than } 60,000 \text{ lbs/hr (30 tons/hr)}$$

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

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

Compliance Determination Requirements

D.1.4 Particulate Matter (PM) [326 IAC 2-1-3]

The Permittee shall perform particulate matter (PM) testing on stack S9 within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, utilizing Methods 5 or 17 (40 CFR 60, Appendix A) for PM or other methods as approved by the Commissioner.

D.1.5 Volatile Organic Compounds (VOC)

- (a) Compliance with the VOC content and usage limitations contained in Conditions D.1.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3)(A) and 326 IAC 8-1-2(a)(7) using formulation data supplied by the coating manufacturer.
- (b) IDEM, OAM reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4. These tests shall be performed pursuant to 326 IAC 3-6 (Source Sampling Procedures), as stated in C.9, utilizing methods approved by the Commissioner.

Compliance Monitoring Requirements

D.1.6 Particulate Matter (PM) [326 IAC 6-3-2]

- (a) The baghouses for PM control shall be in operation at all times when the corresponding equipment is in operation.
- (b) The filter for PM control shall be in operation at all times when the lubricant surface coating booth (PS-4) is in operation.

D.1.7 Surface Coating Filter Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filter. To monitor the performance of the dry filter, daily observations shall be made of the over spray while the booth is operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.
- (b) Weekly inspections shall be performed of the coating emissions from the stack and the presence of over spray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an over spray emission, evidence of over spray emission, or other abnormal emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

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- (c) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

D.1.8 Visible Emissions Notations

- (a) Visible emission notations of all exhaust to the atmosphere from the fabric filters (baghouses) shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for these units shall contain troubleshooting contingency and response steps for when an abnormal emission is observed.

D.1.9 Parametric Monitoring for Baghouses

- (a) The Permittee shall take readings of the total static pressure drop across the baghouse tubesheets, at least once per day while the baghouse is in operation when exhausting to the atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the baghouses shall be maintained within the range of 0.5 and 12 inches of water. The Preventive Maintenance Plan for these baghouses shall contain troubleshooting contingency and corrective actions for when the pressure reading is outside of this range for any one reading.
- (b) The instrument used for determining the pressure shall comply with Section C - Pressure Gauge Specifications, of this permit, shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.

Record Keeping Requirements

D.1.10 Record Keeping Requirements

- (a) To document compliance with Conditions D.1.1, the Permittee shall maintain records in accordance with (1) through (3) below. Records maintained for (1) through (3) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.1.1.
 - (1) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;

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- (2) A log of the dates of use;
- (3) The volume weighted VOC content of the coatings used for each month;
- (b) To document compliance with Condition D.1.6(b) and D.1.7, the Permittee shall maintain a log of daily over spray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.
- (c) To document compliance with Condition D1.8, the Permittee shall maintain records of daily visible emission notations of the stack exhaust #S 1, 2, 6, 9, and 11.
- (d) To document compliance with Condition D1.9, the Permittee shall maintain the following:
 - (1) Daily records of the baghouse tubesheet total static pressure drop during normal operation when venting to the atmosphere.
 - (2) Documentation of all response steps implemented, per event .
 - (3) Operation and preventive maintenance logs, including work purchases orders shall be maintained.
 - (4) Quality Assurance/Quality Control (QA/QC) procedures.
 - (5) Operator standard operating procedures (SOP).
 - (6) Manufacturer's specifications or its equivalent.
 - (7) Equipment "troubleshooting" contingency plan.
 - (8) Documentation of the dates vents are redirected.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.1.11 Malfunction Condition [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 Management (OAM) 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 OAM, 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.

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- (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]

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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. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

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. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

***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 Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name: AeroForge Corporation
Source Location: 3901 South Delaware Drive, Muncie, IN 47303
County: Delaware
Construction Permit No.: CP-035-9563-00011
SIC Code: 3724
Permit Reviewer: Dr. T. P. Sinha

The Office of Air Management (OAM) has reviewed an application from AeroForge Corporation relating to the construction and operation of an aircraft engine parts plant, consisting of the following equipment:

- (1) three (3) Wheelabrator abrasive saws, and one (1) inspection booth (P.S-1), maximum capacity of 463 parts per hour, the no. 3 saw, and inspection booth controlled by a fabric filter (P.S.C-1), and exhausting at stack Pt # S1;
- (2) twelve (12) hand grind stations (P.S-2), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-2), and exhausting at stack Pt # S2;
- (3) one (1) maintenance grind station (P.S-2), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-2), and exhausting at stack Pt # S2;
- (4) one (1) lubricant surface coating booth (P.S-4) equipped with two electrostatic air atomized guns, maximum capacity of surface coating 845 parts per hour, controlled by a dry fiberglass filter (P.S.C-4), and exhausting at stack Pt # S4;
- (5) ten (10) natural gas fired rotary hearth furnaces (P.S.- 5), capacity of 8.308 MMBTU per hour each, and exhausting at stack Pt # S5;
- (6) two (2) Wheelabrator/Irvin steel shot blast machines (P.S -6) with a blast rate of 1,000 pounds per hour, maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-6)), and exhausting at stack Pt # S6;
- (7) one (1) acid bath milling operation using hydrofluoric and sulfuric acids (P.S -7), maximum capacity of 0.4 tons of acid per hour, controlled by a scrubber (P.S.C-7), and exhausting at stack Pt # S7;
- (8) one (1) forge machine (P.S -8), maximum capacity of 18.9 parts per hour, and exhausting at stack Pt # S8;
- (9) one (1) Pangborn roto steel grit blast machines, and graphite die pattern cutting operation (P.S - 9) with a blast rate of 1,000 pounds per hour, maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-9), and exhausting at stack Pt # S9;

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- (10) six (6) electrical discharge machines (EDMs) under an oil bath (P.S -10) with a oil usage rate of 2.45 pounds per hour, and exhausting at stack Pt # S10;
- (11) one (1) lime bag dumping station (P.S -11), maximum capacity of 1,500 pounds per hour, controlled by a fabric filter (P.S.C-11), and exhausting at stack Pt # S11;
- (12) one (1) molten salt bath cleaning operation with a natural gas fired 0.5 MMBTU per hour heater (P.S -12), and exhausting at stack Pt # S12;
- (13) one (1) fabric filter (P.S.C-1) with a gas flow rate of 3,000 acfm at 70⁰ F, and exhausting at stack Pt. # S1;
- (14) one (1) fabric filter (P.S.C-2) with a gas flow rate of 15,000 acfm at 70⁰ F, and exhausting at stack Pt. # S2;
- (15) one (1) dry filter (P.S.C-4) with a gas flow rate of 11,000 acfm at 70⁰ F, and exhausting at stack Pt. # S4;
- (16) one (1) fabric filter (P.S.C-6) with a gas flow rate of 3,500 acfm at 70⁰ F, and exhausting at stack Pt. # S6;
- (17) one (1) scrubber (P.S.C-7) with a gas flow rate of 10,000 acfm at 70⁰ F, and with a lime water slurry recirculation rate of 118 gallons per minute and exhausting at stack Pt. # S7;
- (18) one (1) fabric filter (P.S.C-9) with a gas flow rate of 5,250 acfm at 70⁰ F, and exhausting at stack Pt. # S9; and
- (19) one (1) fabric filter (P.S.C-11) with a gas flow rate of 1,050 acfm at 70⁰ F, and exhausting at stack Pt. # S11.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-1		20	1	3,000	70
S-2		25	2.5	15,000	70
S-4		12	2.83	11,000	70
S-5		6	4.8	20,120	70
S-6		20	0.83	3,500	70
S-7		45	2	10,000	70
S-8		6	4.8	50	80
S-9		20	1.33	5,250	70
S-10		16	0.83	818	70
S-11		6	4.8	1,050	70
S-12		20	3	122	70

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Recommendation

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

Information, unless otherwise stated, 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 March 13, 1998, with supplemental information received on March 24, 1998.

Emissions Calculations

See Appendix A (Emissions Calculation (9 pages), and surface coating spreadsheet (1 page)) for detailed calculations.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	69.1	222
Particulate Matter (PM10)	69.1	215
Sulfur Dioxide (SO ₂)	3.0	3.0
Volatile Organic Compounds (VOC)	31.6	20.5
Nitrogen Oxides (NO _x)	36.6	36.6
Carbon Monoxide (CO)	7.7	7.69
Single Hazardous Air Pollutant (HAP)	9.59	9.59
Combination of HAPs	9.59	9.59

- (a) Allowable PM emissions are determined from the applicability of rule 326 IAC 6-3. See attached spreadsheets for detailed calculations.
- (b) The allowable PM emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (c) Allowable VOC emissions are determined from the applicability of rule 326 IAC 8-2-9. See attached spreadsheets for detailed calculations.

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- (d) The potential emissions of VOC before control are less than the allowable emissions, therefore, the potential emissions of VOC before control are used for the permitting determination.
- (e) Since there are no 326 IAC rule applicable to NO_x, CO, and SO₂ emissions, the potential NO_x, CO, and SO₂ emissions are taken as allowable emissions for permitting determination.
- (f) Allowable emissions (as defined in the Indiana Rule) of PM, and NO_x are greater than 25 tons per year each. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.
- (g) Allowable emissions (as defined in the Indiana Rule) of a single hazardous air pollutant (HAP) are less than 10 tons per year and/or the allowable emissions of any combination of the HAPs are less than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, a construction permit is not required.

County Attainment Status

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Delaware County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Delaware County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

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

Pollutant	Emissions (ton/yr)
PM	15.4
PM10	15.4
SO ₂	1.94
VOC	20.5
CO	7.69
NO _x	36.6
Single HAP	9.59
Combination HAPs	9.59

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- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This new source is subject to the Part 70 Permit requirements because the potential emissions of particulate matter 10 micron (PM10) is greater than 100 tons per year,

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 60 applicable to this source.

326 IAC 14 and 40 CFR 61, and 63 (Emission Standard For Hazardous Air Pollutants)
The facilities under this construction are not subject to Emission Standard For Hazardous Air Pollutants, 326 IAC 14; and 40 CFR 61, and 63 as no hazardous air pollutants covered under these rules are emitted from these facilities.

State Rule Applicability

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because the source is not one of the listed counties, and does have potential emissions more than 100 tons/yr of particulate matter 10 microns (PM10).

326 IAC 6-3-2 (Particulate Emission Limitations for Process Operations)

The particulate matter (PM) emission from the Abrasive saws is 0.771 pounds per hour, which is less than the allowable emissions of 1.57 pounds per hour, based on process weight rate of 0.239 tons per hour. Therefore, it meets the 326 IAC 6-3-2 rule.

The particulate matter (PM) emission from the H-Grind stations & M-Grind station is 0.012 pounds per hour, which is less than the allowable emissions of 1.57 pounds per hour, based on a process weight rate of 0.239 tons per hour. Therefore, it meets the 326 IAC 6-3-2 rule.

The particulate matter (PM) emission from the Abrasive blasting is 0.60 pounds per hour, which is less than the allowable emissions of 4.10 pounds per hour based on a process weight rate of 1.0 ton per hour. Therefore, it meets the 326 IAC 6-3-2 rule.

The particulate matter (PM) emission from the forge operation is 0.140 pounds per hour, which is less than the allowable emissions of 1.57 pounds per hour based on a process weight rate of 0.239 ton per hour. Therefore, it meets the 326 IAC 6-3-2 rule.

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The particulate matter (PM) emission from the roto blast machine, and graphite die pattern cutting is 0.45 pounds per hour, which is less than the allowable emissions of 2.58 pounds per hour based on a process weight rate of 0.5 tons per hour. Therefore, it meets the 326 IAC 6-3-2 rule.

The particulate matter (PM) emission from the lime bag dumping operation is 0.09 pounds per hour, which is less than the allowable emissions of 3.38 pounds per hour based on a process weight rate of 0.75 tons per hour. Therefore, it meets the 326 IAC 6-3-2 rule.

The surface coating operation shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$

$$P = \text{process weight in tons per hour, if}$$

$$P \text{ is equal to or less than } 60,000 \text{ lbs/hr (30 tons/hr)}$$

326 IAC 7-1.1-1 (Sulfur dioxide emission Limitations)

The natural gas fired rotary hearth furnaces, and molten salt bath cleaning heater are not subject to 326 IAC 7-1.1-1 (Sulfur dioxide emission Limitations), because none of these facilities has the potential to emit twenty-five (25) tons of sulfur dioxide per year or have actual emissions of ten (10) pounds of sulfur dioxide per hour.

326 IAC 8-2-9 (Surface coating emission limitations: miscellaneous metal coating operations)

This surface coating operation is subject to this rule, because the coating application system is air dried. Pursuant to this rule the volatile organic compounds content of coatings as applied to the engine parts, shall be limited to 3.5 pounds per gallon of coating less water delivered to the applicator. The volatile organic compounds content of coatings as applied to the engine parts, is 1.62 pounds per gallon of coating less water delivered to the applicator. Therefore, the coating operation complies with the rule 326 IAC 8-2-9.

326 IAC 8-2-9 Emission Minimization

That pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), solvent sprayed from the application equipment during clean up or color changes shall be directed into containers. Such containers shall be closed as soon as such solvent spraying is complete, and the waste solvent shall be disposed of in such a manner that evaporation is minimized.

326 IAC 9-1-1 (Carbon Monoxide emission Limits)

The natural gas fired rotary hearth furnaces, and molten salt bath cleaning heater are not one of the listed facilities under this rule. Therefore, the rule 326 IAC 9-1-1 does not apply to these facilities.

326 IAC 10-1-1 (Nitrogen Oxides Rules)

The natural gas fired rotary hearth furnaces, and molten salt bath cleaning heater are not located in Clark and Floyd Counties. Therefore, this rule does not apply to these facilities.

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326 IAC 2-1-3.4 (New Source Toxics Control Rule)

The single HAP, and combined HAPs emissions from the engine parts manufacturing operation are less than 10, and 25 tons per year respectively. Therefore the rule 326 IAC 2-1-3.4 does not apply to this source.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This new source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.
- (b) See attached spreadsheets for detailed air toxic calculations.

Conclusion

The construction of this engine parts machining, finishing, and coating operations will be subject to the conditions of the attached proposed **Construction Permit No. CP-035-9563-00011**.

AeroForge Corporation
1200 W. Jackson Street
Muncie, IN 47303

Affidavit of Construction

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

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.
2. I hold the position of _____ for _____.
(Title) (Company Name)
3. By virtue of my position with _____, I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of AeroForge Corporation.
4. I hereby certify that AeroForge Corporation, 3901 South Delaware Drive, Muncie, IN 47303, has constructed the
 - (a) three (3) Wheelabrator abrasive saws (P.S- #1, #2, and #3), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-1), and exhausting at stack Pt # S1;
 - (b) twelve (12) hand grind stations (P. S- 2), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-2), and exhausting at stack Pt # S2;
 - (c) one (1) maintenance grind station (P. S- 2), maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-2), and exhausting at stack Pt # S2;
 - (d) one (1) lubricant surface coating booth (P. S-4) equipped with two electrostatic air atomized guns, maximum capacity of surface coating 845 parts per hour, controlled by a dry fiberglass filter (P.S.C-4), and exhausting at stack Pt # S4;
 - (e) ten (10) natural gas fired rotary hearth furnaces (P. S.- 5), capacity of 8.308 MMBTU per hour each, and exhausting at stack Pt # S5;
 - (f) two (2) Wheelabrator/Irvin steel shot blast machines (P. S - 6) with a blast rate of 1,000 pounds per hour, maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-6)), and exhausting at stack Pt # S6;
 - (g) one (1) acid bath milling operation using hydrofluoric and sulfuric acids (P. S - 7), maximum capacity of 0.4 tons of acid per hour, controlled by a scrubber (P.S.C-7), and exhausting at stack Pt # S7;
 - (h) one (1) forge machine (P. S -8), maximum capacity of 18.9 parts per hour, and exhausting at stack Pt # S8;
 - (i) one (1) Pangborn roto steel grit blast machines, and graphite die pattern cutting operation (P. S - 9) with a blast rate of 1,000 pounds per hour, maximum capacity of 463 parts per hour, controlled by a fabric filter (P.S.C-9), and exhausting at stack Pt # S9;
 - (j) six (6) electrical discharge machines (EDMs) under an oil bath (P. S - 10) with a oil usage rate of 2.45 pounds per hour, and exhausting at stack Pt # S10;
 - (k) one (1) lime bag dumping station (P. S - 11), maximum capacity of 1,500 pounds per hour, controlled by a fabric filter (P.S.C-11), and exhausting at stack Pt # S11;
 - (l) one (1) molten salt bath cleaning operation with a natural gas fired 0.5 MMBTU per hour heater (P. S - 12), and exhausting at stack Pt # S12;
 - (m) one (1) fabric filter (P.S.C-1) with a gas flow rate of 3,000 acfm at 70° F, and exhausting at stack Pt. #

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- S1;
- (n) one (1) fabric filter (P.S.C-2) with a gas flow rate of 15,000 acfm at 70° F, and exhausting at stack Pt. # S2;
- (o) one (1) dry filter (P.S.C-4) with a gas flow rate of 11,000 acfm at 70° F, and exhausting at stack Pt. # S4;
- (p) one (1) fabric filter (P.S.C-6) with a gas flow rate of 3,500 acfm at 70° F, and exhausting at stack Pt. # S6;
- (q) one (1) scrubber (P.S.C-7) with a gas flow rate of 10,000 acfm at 70° F, and with a lime water slurry recirculation rate of 118 gallons per minute and exhausting at stack Pt. # S7;
- (r) one (1) fabric filter (P.S.C-9) with a gas flow rate of 5,250 acfm at 70° F, and exhausting at stack Pt. # S9; and
- (s) one (1) fabric filter (P.S.C-11) with a gas flow rate of 1,050 acfm at 70° F, and exhausting at stack Pt. # S11.

in conformity with the requirements and intent of the construction permit application received by the Office of Air Management on March 13, 1998 and as permitted pursuant to **Construction Permit No. CP-035-9563, Plant ID No. 035-00011** issued on

5. Additional (?operations/facilities) were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit. (Delete this statement if it does not apply.)

6. I hereby certify that AeroForge Corporation is now subject to the Title V program and will submit a Title V (or FESOP) operating permit application within twelve (12) months from the postmarked submission date of this Affidavit of Construction.

Further Affiant said not.

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

Signature

Date

STATE OF INDIANA)
)SS

COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 19 _____.

My Commission expires: _____

Signature

Name (typed or printed)

AeroForge Corporation
Muncie, Indiana

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Review Engineer: Dr. T. P. Sinha

APPENDIX A

The company has applied for a construction permit to construct and operate a forge plant at 3901 South Delaware Drive, Muncie, Indiana. There are several pieces of equipment like saw, hand grind stations, lubricant coating, rotary hearth furnaces, shot blasters, acid bath milling operation, forge operation, die pattern cutting, EDM machines, lime bag dumping station, and molten salt bath cleaning operation.

The company is moving the equipment from one location to another. Although the equipment were permitted, they will need a new permit for new location. There will not be any equipment left at the old location. Therefore, the new location will be the only source's address.

1. Abrasive Saws

From CP 035-3687-00011

The uncollected PM/PM10 emissions is taken as collected emissions in the baghouse.

Collected particulate matter	=	0.4	tons/yr, based on 500 hours
Filter air volume	=	3000	scfm of operation
Filter outlet loading	=	0.01	gr/scf
Pot. PM/PM10 collected	=	0.4 tons/yr*8760 hrs/500 hrs	
	=	7.01	tons/yr

Cont. PM/PM10 emissions	=	Air flow* Exhaust loading
	=	3,000 scfm*0.01 gr/scf*60 min/hr* 1 lb/7,000 gr
	=	0.257 lbs/hr
	=	(0.257 lbs/hr)*(8,760 hrs/yr)/(2,000 lbs/ton)
	=	1.13 tons/yr

Pot. PM/PM10 emissions	=	3*7.01 tons/yr
	=	21.03 tons/yr

Cont. PM/PM10 emissions	=	3*0.257 lbs/hr
	=	0.771 lbs/hr
	=	(0.771 lbs/hr)*(8,760 hrs/yr)/(2,000 lbs/ton)
	=	3.38 tons/yr

Process weight rate	=	477	lbs/hr
Allowable PM emissions	=	$4.10P^{0.67}$	lbs/hr
from 326 IAC 6-3-2	=	$4.10*0.239^{0.67}$	lbs/hr
	=	1.57	lbs/hr

The controlled PM emissions are less than the allowable emissions.
 Therefore, the process complies with the rule.

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2. H-Grind stations (12) & M-Grind station (1)

Hand grind collected emissions

The uncollected PM/PM10 emissions are taken as collected emissions in the baghouse.

Collected particulate matter	=	8	tons/yr, based on 500 hours of operation
Operating hours	=	2800	hours
Potential PM collected	=	(8 tons/yr)*(8760 hrs/2800 hrs)	
	=	25.03	tons/yr
Collection efficiency	=	99.9	%
Controlled PM emissions	=	[100 *(particle collected/collection efficiency)] - particle collect	
	=	{[100 *(25.03/99.9)] - 25.03}	tons/yr
	=	0.025	tons/yr

Maintenance grind collected emissions

The uncollected PM/PM10 emissions is taken as collected emissions in the baghouse.

Collected part. matter	=	2	tons/yr, based on 500 hours of operation
Operating hours	=	600	hours
Potential PM collected	=	(8 tons/yr)*(8760 hrs/2800 hrs)	
	=	29.20	tons/yr
Collection efficiency	=	99.9	%
PM10/PM	=	0.86	
Controlled PM emissions	=	[100 *(particle collected/collection efficiency)] - particle collect	
	=	{[100 *(29.2/99.9)] - 29.2}	tons/yr
	=	0.029	tons/yr
Total Cont. PM emissions	=	0.054	tons/yr
	=	0.054	tons/yr
	=	(0.054 tons/yr)*(2,000 lbs/ton)*(yr/8,760 hrs)	
	=	0.012	lbs/hr
Total cont. PM10 emiss.	=	PM emissions * (PM10/PM)	
	=	0.054 tons/yr *0.86	
	=	0.047	tons/yr
Total pot. PM emissions	=	Total PM collected	
	=	(25.03 + 29.2) tons/yr	
	=	54.2	tons/yr

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Process weight rate	=	477	lbs/hr
Allowable PM emissions	=	$4.10P^{0.67}$	lbs/hr
from 326 IAC 6-3-2	=	$4.10 \cdot 0.239^{0.67}$	lbs/hr
	=	1.57	lbs/hr

The controlled PM emissions are less than the allowable emissions.
 Therefore, the process complies with the rule.

3. Machining operations: Abrasive blasting

From CP 035-3687-00011

The uncollected PM/PM10 emissions is taken as collected emissions in the baghouse.

Collected part. matter	=	0.9	tons/yr, based on 4,800 hours
Filter air volume	=	3,500	scfm of operation/yr
Filter outlet loading	=	0.01	gr/scf
Operating hours	=	4,800	hrs
No. of machines	=	2	

Pot. PM/PM10 collected	=	$(0.9 \text{ tons/yr}) \cdot (8,760 \text{ hrs}/4,800 \text{ hrs})$	
	=	3.29	tons/yr

Cont. PM/PM10 emiss.	=	Air flow* Exhaust loading	
	=	$(2 \cdot 3,500 \text{ scfm}) \cdot (0.01 \text{ gr/scf}) \cdot (60 \text{ min/hr}) \cdot (1 \text{ lb}/7,000 \text{ gr})$	
	=	0.600	lbs/hr
	=	$(0.600 \text{ lbs/hr}) \cdot (8,760 \text{ hrs/yr}) / (2,000 \text{ lbs/ton})$	
	=	2.63	tons/yr

Total pot. PM emiss.	=	Total PM collected	
	=	3.29	tons/yr

Process wt. rate	=	2,000	lbs/hr
Allowable PM emissions	=	$4.10P^{0.67}$	lbs/yr
from 326 IAC 6-3-2	=	$4.10 \cdot 1^{0.67}$	lbs/yr
	=	4.10	lbs/yr

The controlled PM emissions are less than the allowable emissions.
 Therefore, the process complies with the rule.

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4. Chemical milling

Chemical milling: Emiss. factors from : SCC# 3-09-011-02

HF/H₂SO₄ Bath Scrubber efficiency = 99%

	Emiss. factor: (lbs/ton)	Process rate (tons/hr)	Annual rate (tons/yr)
SO ₂	0.6	0.400	3,504
HF acid	0.84	0.400	3,504

	Pot. emis. (tons/yr)	Cont. emiss. (tons/yr)	Cont. emiss. (lbs/hr)
SO ₂	1.05	0.011	0.002
PM/PM ₁₀	1.48	0.015	0.003

Note: NO_x factor not applicable since Nitric acid is not used.

The HF acid factor was determined from the ratio of HF acid to sulfuric acid in the bath.

Scrubber efficiency documented and accepted as 99% in the application for operating permit renewal dated 5/8/90.

Source exemption from registration and permit requirements was documented in the February 1983, APCB operating status letter. Also, when the change in acids used was reported by the company by letter of April 21, 1994, no IDEM response occurred. No facility modification has occurred. No rules exist for the sulfur dioxide potential emission rates of this operation.

5. Forge operation

Emissions Basis

Graphite used:	1,550	lbs/yr
Parts forged:	208,778	Parts/yr
Forging hours:	11,062	Hrs
Forges/hour:	18.9	Parts/hr
Graphite/part	0.00742	lb/part
Maximum rate:	4,056,000	Units/yr
	463	Units/hr

Description: Powdered graphite, mixed with water, is sprayed onto the dies for lubrication.

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	Emiss. factor (lbs/part)	Process wt. rate Parts/hr	Annual rate Parts/yr
PM/PM10	0.00742	18.9	208,778
	Pot. emis. (tons/yr)	Cont. emiss. (tons/yr)	Cont. emiss. (lbs/hr)
PM/PM10	0.613	0.613	0.140

Basis for emission factors:

(1) Actual carbon used per operating hour.

Process weight rate	=	477	lbs/hr
Allowable PM emissions	=	$4.10P^{0.67}$	lbs/hr
from 326 IAC 6-3-2	=	$4.10*0.239^{0.6}$	lbs/hr
	=	1.57	lbs/hr

The controlled PM emissions are less than the allowable emissions.

Therefore, the process complies with the rule.

6. Pangborn roto blast machine and graphite die pattern cutting

One rotoblast machine is utilized. Particulate emissions from the rotoblast unit and 3 graphite die pattern cutting operations are aspirated to a fabric filter.

The uncollected PM/PM10 emissions is taken as collected emissions in the baghouse.

Collected part. matter	=	0.548	tons/yr, based on 4,800 hours
Filter air volume	=	5,250	scfm of operation/yr
Filter outlet loading	=	0.01	gr/scf
Operating hours	=	2,753	hrs
No. of machines	=	1	
PM/PM10 emiss.	=	0.004	lb/lb of abrasive
Abrasive rate	=	1,000	lbs/hr
Pot. PM/PM10 emiss.	=	$(1,000 \text{ lbs/hr}) * (0.004 \text{ lb/lb})$	
	=	4.00	lbs/hr
	=	$(4.0 \text{ lbs/hr}) * (8,760 \text{ hrs/yr}) / (2,000 \text{ lbs/ton})$	
	=	17.5	tons/yr
Cont. PM/PM10 emiss.	=	Air flow* Exhaust loading	

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$$\begin{aligned}
 &= (5,250 \text{ scfm}) \cdot (0.01 \text{ gr/scf}) \cdot (60 \text{ min/hr}) \\
 &= 0.450 \text{ lbs/hr} \quad *(1 \text{ lb}/7,000 \text{ gr}) \\
 &= (0.45 \text{ lbs/hr}) \cdot (8,760 \text{ hrs/yr}) / (2,000 \text{ lbs/ton}) \\
 &= 1.97 \text{ tons/yr} \\
 \\
 \text{Process wt. rate} &= 1,000 \text{ lbs/hr} \\
 \text{Allowable PM emissions} &= 4.10P^{0.67} \text{ lbs/yr} \\
 \text{from 326 IAC 6-3-2} &= 4.10 \cdot 0.5^{0.67} \text{ lbs/yr} \\
 &= 2.58 \text{ lbs/yr}
 \end{aligned}$$

The controlled PM emissions are less than the allowable emissions.
 Therefore, the process complies with the rule.

7. EDM machines

Description: Die cutting is by electrical discharge machine (EDM) under an oil bath.
 (Total for 6 machines)

Basis for emission factors:

- (1) Actual oil used per year is presumed emitted as VOC fumes.
- (2) Oil use based on 660 gallons per 2000 hours of operation.

Oil use: 2891 gals/yr
 0.33 gals/hr
 Oil density: 7.4 lb/gal
 Maximum rate: 4,056,000 Units/yr
 463 Units/hr

$$\begin{aligned}
 \text{Pot. VOC emissions} &= (2,891 \text{ gals}) \cdot (7.4 \text{ lb/gal}) / (8,760 \text{ hrs}) \\
 &= 2.44 \text{ lbs/hr} \\
 &= (2.44 \text{ lbs/hr}) \cdot (8,760 \text{ hrs/yr}) / (2,000 \text{ lbs/ton}) \\
 &= 10.70 \text{ tons/yr} \\
 \\
 \text{Cont. VOC emissions} &= 10.70 \text{ tons/yr}
 \end{aligned}$$

8. Lime bag dumping

One bag dump station is utilized. The lime is dumped into water.
 The airborne dust generated is aspirated to a fabric filter.
 Particulates collected fall into the lime/water slurry.

Emissions factors are from SCC # 3-05-011-07

Data taken from CP 035-3687

$$\begin{aligned}
 \text{Collected part. matter} &= 0.300 \text{ tons/yr, based on 300 hours} \\
 \text{Filter air volume:} &= 1,050 \text{ scfm}
 \end{aligned}$$

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Filter exhaust loading:	=	0.01	grains/scf
Filter Efficiency:	=	99.9	%
Process rate:	=	1,500	lbs/hr
Operating hours	=	300	hrs
Potential PM collected	=	(0.3 tons/yr)*(8760 hrs/300 hrs)	
	=	8.76	tons/yr
Cont. PM/PM10 emiss.	=	Air flow* Exhaust loading	
	=	(5,250 scfm)*(0.01 gr/scf)*(60 min/hr)	
	=	0.090	lbs/hr *(1 lb/7,000 gr)
	=	(0.09 lbs/hr)*(8,760 hrs/yr)/(2,000 lbs/ton)	
	=	0.394	tons/yr
Process weight rate	=	1,500.00	lbs/hr
Allowable PM emission	=	4.10P ^{0.67}	lbs/hr
from 326 IAC 6-3-2	=	4.10*0.75 ^{0.67}	lbs/hr
	=	3.38	lbs/hr

The controlled PM emissions are less than the allowable emissions.
 Therefore, the process complies with the rule.

9. Molten salt bath cleaning operation

Combustion calculations

Heat Input Capacity	Potential Throughput
MMBtu/hr	MMCF/yr
0.5	4.38

	Pollutant			
	PM	PM10	SO2	NOx
Emiss. Factor	12.0	12.0	0.6	100.0
in lb/MMCF				
Pot. Emission	0.026	0.026	0.001	0.219
in tons/yr		VOC	CO	
		5.3	21.0	
		0.012	0.046	

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

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Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

10. Rotary Hearth Furnaces (10)

Combustion calculations

Natural gas fired

Heat Input Capacity MMBtu/hr/furnace	No. of furnaces	Potential Throughput MMCF/yr
	10	
8.308		728

	Pollutants					
	PM	PM10	SO2	NOx	VOC	CO
EmissFactor in lb/MMCF	12.0	12.0	0.6	100.0	5.3	21.0
Pot. Emiss. in tons/yr	4.37	4.37	0.218	36.4	1.93	7.64

Methodology

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low Nox Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

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Summary of Controlled Emissions

Operation	PM (tons/yr)	PM10 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	CO (tons/yr)
Abrasives	3.38	3.38				
Grind Stns	0.054	0.047				
Abr. Blast.	2.63	2.63				
Chem Mill.	0.015	0.015		0.011		
Forge	0.613	0.613				
blast & die cut	1.97	1.97				
EDM m/c	0		10.7			
Lime bag dum	0.394	0.394				
Salt bath	0.026	0.026	0.012	0.001	0.219	0.046
Hearth Fur.	4.37	4.37	0.218	1.93	36.4	7.64
Surf. Coat	1.94	1.94	9.59			
Total	15.4	15.4	20.5	1.94	36.6	7.69

Summary of Potential Emissions

Operation	PM (tons/yr)	PM10 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	NOx (tons/yr)	CO (tons/yr)
Abrasives	21.03	21.03				
Grind Stns	54.23	46.6				
Abr. Blast.	3.29	3.29				
Chem Mill.	1.48	1.48		1.05		
Forge	0.613	0.613				
blast & die cut	17.5	17.5				
EDM m/c			10.7			
Lime bag dum	8.76	8.76				
Salt bath	0.026	0.026	0.012	0.001	0.219	0.046
Hearth Fur.	4.37	4.37	0.218	1.93	36.4	7.64
Surf. Coat	110.87	110.87	9.59			
Total	222	215	20.5	2.98	36.6	7.69

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: AeroForge Corporation
Address 3901 South Delaware Drive, Muncie, IN 47303
CP: 035-9563
Plt ID: 035-00011
Reviewer: Dr. T. P. Sinha
Date: 04/07/98

Material	Density (Lb/Gal)	Weight % Volatile (H2O& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential ton/yr	PM/PM10 Controlled ton/yr	lb VOC /gal solids	Transfer Efficiency
Oxylube-79322 (as applied)	10.8	68.30%	67.34%	0.96%	93.6%	7.40%	0.02500	845	1.62	0.10	2.19	52.57	9.59	110.87	1.94	1.40	65%
Oxylube-811(as applied)	10.8	68.30%	67.34%	0.96%	93.6%	7.40%	0.02500	845	1.62	0.10	2.19	52.57	9.59	110.87	1.94	1.40	65%
Worst case										2.19	52.57	9.59	110.87				

All VOCs are HAPs. Potential HAPs Emissions = 9.59 tons/yr

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)
Pounds of VOC per Gallon Coating = (Density (lb/gal) * Weight % Organics)
Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)
Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)
Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)
Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)
Pounds VOC per Gallon of Solids = (Density (lbs/gal) * Weight % organics) / (Volume % solids)
Total = Worst Coating + Sum of all solvents used

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21.0
0.000