

**FEDERALLY ENFORCEABLE STATE
OPERATING PERMIT (FESOP)
OFFICE OF AIR MANAGEMENT**

**Reed Minerals - A Harsco Company, Plant No. 11
8317 North U.S. Highway 41
Shelburn, Indiana 47879-0067**

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 and 326 IAC 2-1-3.2, 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.

Operation Permit No.: F153-7700-00012	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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For Control Equipment Monitoring Only

Deviation Occurrence Report

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 [326 IAC 2-8-3(b)]

The Permittee owns and operates a coal slag (boiler slag) processing plant.

Responsible Official: Isaac J. Davidson
Source Address: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
Mailing Address: P.O. Box 67, Shelburn, Indiana 47879-0067
SIC Code: 3295
County Location: Sullivan County
County Status: Attainment for all criteria pollutants
Source Status: Federally Enforceable State Operating Permit (FESOP)
Minor Source, under PSD Rules

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

- (a) One (1) prescreening operation (ID# P01) with a maximum capacity of 25 tons per hour. This operation is not equipped with any control devices;
- (b) One (1) natural gas-fired fluid-bed dryer (ID# P02), using no. 2 fuel oil as a back-up fuel, with a maximum heating capacity of 8.5 million British thermal units (Btu) per hour and a maximum drying capacity of 25 tons per hour. This facility is equipped with a wet scrubber (ID# E01), which includes a demister, for particulate control and exhausts through stack E01;
- (c) Processing Area
This area has a maximum processing capacity of 25 tons per hour and includes two (2) crushers (ID#s P03 and P06), four (4) screens (ID#s P04, P05, P07, and P09), four (4) enclosed bucket elevators (ID#s M05, M10, M12, and M15), a conveying system, blending silos ID# M06, and product storage silos (ID# M16). This area is equipped with a wet scrubber (ID# E02), which includes a demister, for particulate control and exhausts through stack E02.

A.3 Insignificant Activities [326 IAC 2-7-1(20)] [326 IAC 2-8-3(c)(3)(I)]

This stationary source also includes the following insignificant activities, as defined in 326 IAC 2-7-1(20):

- (a) Propane or liquefied petroleum gas, or butane-fired combustion units with heat input equal to or less than six million (6,000,000) Btu per hour;
- (b) Equipment powered by internal combustion engines of capacity equal to or less than five hundred thousand (500,000) Btu per hour, except where total capacity of equipment operated by one stationary source exceeds two million (2,000,000) Btu per hour;
- (c) Combustion source flame safety purging on start up;
- (d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thirty thousand (230,000) gallons per month;
- (e) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;

- (f) Packaging lubricants and greases;
- (g) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases;
- (h) The following equipment related to the manufacturing activities not resulting in the emissions of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment. (Note: These insignificant activities have applicable requirements in section D.4.);
- (i) Paved and unpaved roads and parking lots with public access;
- (j) Equipment used to collect any material that might be released during a malfunction, process upset, or spill clean-up, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment; and
- (k) Blowdown for any of the following: sight glass, boiler, compressors, pumps, and cooling tower.

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) for a Federally Enforceable State Operating Permit (FESOP).

A.5 Prior Permit Conditions Superseded [326 IAC 2]

This permit supersedes the operating conditions of all construction and operating permits issued to this stationary source under 326 IAC 2 prior to the effective date of this FESOP.

SECTION B GENERAL CONDITIONS

B.1 General Requirements [IC 13-15] [IC 13-17]

The Permittee shall comply with the provisions of IC 13-15 (Permits Generally), IC 13-17 (Air Pollution Control) and the rules promulgated thereunder.

B.2 Definitions [326 IAC 2-8-1]

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, any applicable definitions found in IC 13-11, 326 IAC 1-2, and 326 IAC 2-7 shall prevail.

B.3 Permit Term [326 IAC 2-8-4(2)]

This permit is issued for a fixed term of five (5) years from the effective date, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3.

B.4 Enforceability [326 IAC 2-8-6]

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

B.5 Termination of Right to Operate [326 IAC 2-8-9] [326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.6 Severability [326 IAC 2-8-4(4)] [326 IAC 2-8-7(a)(3)]

- (a) The provisions of this permit are severable, and if any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.
- (b) Indiana 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.

B.7 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

B.8 Duty to Supplement and Provide Information [326 IAC 2-8-3(f)] [326 IAC 2-8-4(5)(E)]

- (a) The Permittee, upon becoming aware that any relevant facts were omitted or incorrect information was submitted in the permit application, shall promptly submit such supplementary facts or corrected information to:

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

- (b) The Permittee shall furnish to IDEM, OAM, within a reasonable time, any information that IDEM, OAM, 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.

- (c) Upon request, the Permittee shall also furnish to IDEM, OAM, copies of records required to be kept by this permit. For information claimed to be confidential, the Permittee shall furnish such records directly to the U.S. EPA and IDEM, OAM, along with a claim of confidentiality.

Such confidentiality claims shall meet the requirements of 40 CFR 2, Subpart B (when submitting to U.S. EPA) and 326 IAC 17 (when submitting to IDEM, OAM).

B.9 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAM, may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.10 Compliance with Permit Conditions [326 IAC 2-8-4(5)(A)] [326 IAC 2-8-4(5)(B)]

- (a) The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit constitutes a violation of the Clean Air Act and is grounds for:

- (1) Enforcement action;
- (2) Permit termination, revocation and reissuance, or modification; and
- (3) Denial of a permit renewal application.

- (b) 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.

B.11 Certification [326 IAC 2-8-3(d)] [326 IAC 2-8-4(3)(C)(i)]

- (a) Any application form, report, or compliance certification submitted under this permit shall contain certification by a responsible official of truth, accuracy, and completeness. This certification, and any other certification required under this permit, shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

- (b) This certification shall be submitted on the attached Certification Form.

- (c) A responsible official is defined at 326 IAC 2-7-1(33).

B.12 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall annually certify that this source has complied with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. The certification shall be submitted in letter form no later than July 1 of each year 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

- (b) This annual compliance certification report required by this permit shall be timely if delivered by any method and received and stamped by IDEM, OAM, on or before the date it is due. [326 IAC 2-5-3]

- (c) The annual compliance certification report shall include the following:
 - (1) The identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and
 - (5) Such other facts as specified in Sections D of this permit, IDEM, OAM, may require to determine the compliance status of the source.
- (d) The Permittee shall also annually certify that this source is in compliance with additional requirements as may be specified under Sections 114(a)(3) and 504(b) of the Clean Air Act.

B.13 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)] [326 IAC 2-8-5(a)(1)]

- (a) The Permittee shall prepare, maintain and implement Preventive Maintenance Plans (PMP) within ninety (90) days after the issuance of this permit, including the following information on each:
 - (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;
 - (3) Corrective actions that will be implemented in the event an inspection indicates an out of specification situation;
 - (4) A time schedule for taking such corrective actions including a schedule for devising additional corrective actions for situations that may not have been predicted; and
 - (5) Identification and quantification of the replacement parts which will be maintained in inventory for quick replacement.
- (b) PMPs shall be submitted to IDEM, OAM, upon request and shall be subject to review and approval by IDEM, OAM.

B.14 Emergency Provisions [326 IAC 2-8-12]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-8-12.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describes the following:
 - (1) An emergency occurred and the Permittee can, to the extent possible, identify

the causes of the emergency;

- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAM, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone No.: 1-800-451-6027 (ask for Office of Air Management, Compliance Section) or,
Telephone No.: 317-233-5674 (ask for Compliance Section)
Facsimile No.: 317-233-5967

Failure to notify IDEM, OAM, by telephone or facsimile within four (4) daytime business hours after the beginning of the emergency, or after the emergency is discovered or reasonably should have been discovered, shall constitute a violation of 326 IAC 2-8 and any other applicable rules. [326 IAC 2-8-12(f)]

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted notice either in writing or facsimile, of the emergency 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 two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-8-4(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(33).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
 - (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions) for sources subject to this rule after the effective date of this rule. This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

- (e) IDEM, OAM, may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAM, by telephone or facsimile of an emergency lasting more than one (1) hour in compliance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-8 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
 - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
 - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
 - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw material of substantial economic value.

Any operations shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-8-4(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provision), the probable cause of such deviations, and any corrective actions or preventive measures taken shall be reported 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 ten (10) calendar days from the date of the discovery of the deviation.

- (b) Written notification shall be submitted on the attached Deviation Occurrence Reporting Forms or their substantial equivalent.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination
[326 IAC 2-8-4(5)(C)] [326 IAC 2-8-7(a)] [326 IAC 2-8-8]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a FESOP modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)]
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAM, determines any of the following:
 - (1) That this permit contains a material mistake.

- (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
- (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]
- (c) Proceedings by IDEM, OAM, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAM, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAM, may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.17 Permit Renewal [326 IAC 2-8-3(h)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAM, and shall include, at minimum, the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(20).

Request for renewal shall be submitted to:

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

- (b) Timely Submittal of Permit Renewal [326 IAC 2-8-3]
 - (1) The Permittee has a duty to submit a timely and complete permit renewal application. A timely renewal application is one that is:
 - (A) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (B) Delivered by any method and received and stamped by IDEM, OAM, on or before the date it is due. [326 IAC 2-5-3]
 - (2) If IDEM, OAM, upon receiving a timely and complete 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.
- (c) Right to Operate After Application for Renewal [326 IAC 2-8-9]

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 2-8 until IDEM, OAM, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAM, any additional information identified as needed to process the application.

B.18 Administrative Permit Amendment [326 IAC 2-8-10]

- (a) An administrative permit amendment is a FESOP revision that makes changes of the type specified under 326 IAC 2-8-10(a).
- (b) An administrative permit amendment may be made by IDEM, OAM, consistent with the procedures specified under 326 IAC 2-8-10(b).
- (c) The Permittee may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.19 Minor Permit Modification [326 IAC 2-8-11(a)] [326 IAC 2-8-11(b)(1) and (2)]

- (a) A permit modification is any revision to this permit that cannot be accomplished as an administrative permit amendment under 326 IAC 2-8-10.
- (b) Minor modification of this permit shall follow the procedures specified under 326 IAC 2-8-11(b)(1)(A) through (F).
- (c) An application requesting the use of minor modification procedures shall meet the requirements of 326 IAC 2-8-3(c) and shall include the information required in 326 IAC 2-8-11(b)(3)(A) through (D).
- (d) The Permittee may make the change proposed in its minor permit modification application immediately after it files such application unless the change is subject to the construction permit requirements of 326 IAC 2-1, 326 IAC 2-2, or 326 IAC 2-3. After the Permittee makes the change allowed under minor permit modification procedures, and until IDEM, OAM, takes any of the actions specified in 326 IAC 2-8-11(b)(5), the Permittee must comply with both the applicable requirements governing the change and the proposed permit terms and conditions. During this period, the Permittee need not comply with the existing permit terms and conditions it seeks to modify. If the Permittee fails to comply with its proposed permit terms and conditions during this time period, the existing permit terms and conditions it seeks to modify may be enforced against it. [326 IAC 2-8-11(b)(6)]

B.20 Significant Permit Modification [326 IAC 2-8-11(d)]

- (a) Significant modification procedures shall be used for applications requesting permit modifications that do not qualify as minor permit modifications or as administrative amendments.
- (b) Any significant change in existing monitoring permit terms or conditions and every relaxation of reporting or record keeping permit terms or conditions of this permit shall be considered significant.
- (c) Nothing in 326 IAC 2-8-11(d) shall be construed to preclude the Permittee from making changes consistent with 326 IAC 2-8 that would render existing permit compliance terms and conditions irrelevant.
- (d) Significant modifications of this permit shall meet all requirements of 326 IAC 2-8, including those for application, public participation, and review by U.S. EPA, as they apply to permit issuance and renewal.

B.21 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-8-11(b)(2)]

Notwithstanding 326 IAC 2-8-11(b)(1)(D)(i) and 326 IAC 2-8-11(c)(1), minor permit modification procedures may be used for modifications of this permit involving the use of economic incentives, marketable permits, emissions trading, and other similar approaches to the extent

that such minor permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated by U.S. EPA.

B.22 Changes Under Section 502(b)(10) of the Clean Air Act [326 IAC 2-8-15(b)]

The Permittee may make Section 502(b)(10) of the Clean Air Act changes without a permit revision, subject to the constraint of 326 IAC 2-8-15(a) and the following additional condition:

For each such change, the required written notification shall include a brief description of the change within the source, the date on which the change will occur, any change in emissions, and any permit term or condition that is no longer applicable as a result of the change.

B.23 Operational Flexibility [326 IAC 2-8-15]

(a) The Permittee may make any change or changes at this source that are described in 326 IAC 2-8-15(b) through (d), without prior permit revision, if each of the following conditions is met:

- (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
- (2) Any approval required by 326 IAC 2-1 has been obtained;
- (3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
- (4) The Permittee notifies the:

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

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-8-15(b) through (d) and makes such records available, upon reasonable request, to public review.

Such records shall consist of all information required to be submitted to IDEM, OAM, in the notices specified in 326 IAC 2-8-15(b), (c)(1), and (d).

(b) For each such change, the required written notification shall include the following:

- (1) A brief description of the change within the source;

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

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(33).

- (c) **Emission Trades [326 IAC 2-8-15(c)]**
The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).
- (d) **Alternative Operating Scenarios [326 IAC 2-8-15(d)]**
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAM or U.S. EPA is required.
- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.24 Construction Permit Requirement [326 IAC 2]

Modification, construction, or reconstruction shall be permitted as required by and in accordance with 326 IAC 2.

B.25 Inspection and Entry [326 IAC 2-8-5(a)(2)]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, the Permittee shall allow IDEM, OAM, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) Utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.
[326 IAC 2-8-5(a)(4)]

B.26 Transfer of Ownership or Operation [326 IAC 2-1-6] [326 IAC 2-8-10]

Pursuant to 326 IAC 2-1-6 and 2-8-10:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM,

OAM, Permits Branch, within thirty (30) days of the change. Notification shall include a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current Permittee and the new owner.

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

B.27 Annual Fee Payment [326 IAC 2-8-4(6)] [326 IAC 2-8-16]

- (a) The Permittee shall pay annual fees to IDEM, OAM, consistent with the fee schedule established in 326 IAC 2-8-16.
- (b) Failure to pay may result in administrative enforcement action, revocation of this permit, referral to the Office of Attorney General for collection, or other appropriate measures.
- (c) The Permittee shall pay the annual fee within thirty (30) calendar days of receipt of a billing by IDEM, OAM, or in a time period that is consistent with the payment schedule issued by IDEM, OAM.
- (d) If the Permittee does not receive a bill from IDEM, OAM, thirty (30) calendar days before the due date, the Permittee shall call the following telephone numbers: 1-800-451-6027 or 317-233-5674 (ask for OAM, Data Support Section), to determine the appropriate permit fee. The applicable fee is due April 1 of each year.

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emissions Limitations and Standards [326 IAC 2-8-4(1)]

C.1 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

- (a) Pursuant to 326 IAC 2-8:
- (1) The potential to emit any regulated pollutant, except particulate matter (PM), from the entire source shall be limited to less than one-hundred (100) tons per three hundred sixty-five (365) consecutive day period.
 - (2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per three hundred sixty-five (365) consecutive day period; and
 - (3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per three hundred sixty-five (365) consecutive day period.
- (b) Pursuant to 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), emissions of particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per three hundred sixty-five (365) consecutive day period.
- (c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(20). The source shall be allowed to add insignificant activities not already listed in this permit, provided the source's potential to emit does not exceed the above specified limits.
- (d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2(Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this permit:

- (a) Visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings as determined by 326 IAC 5-1-4,
- (b) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.

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

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]

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

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

The Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2 (1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

C.6 Fugitive Particulate Matter Emission Limitations [326 IAC 6-5]

Pursuant to 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations), fugitive particulate matter emissions shall be controlled according to the plan submitted on December 13, 1996. The plan includes applying water on storage piles, unpaved roadways, material loading and unloading operations on an "as-needed" basis

C.7 Operation of Equipment [326 IAC 2-8-5(a)(4)]

- (a) All equipment that may emit pollutants into the ambient air shall be properly operated to meet the requirements of this permit and maintained in accordance with Section B - Preventive Maintenance Plan.
- (b) Unless otherwise stated in this permit, all air pollution control equipment listed in this permit shall be operated at all times that the emission units vented to the control equipment are in operation.
- (c) The Permittee shall perform all necessary maintenance according to the Preventive Maintenance Plan and make all necessary attempts to keep all air pollution control equipment in proper operating condition at all times such that the requirements of this permit are met.

**C.8 Asbestos Abatement Projects - Accreditation [326 IAC 14-10] [326 IAC 18-1]
[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 must be Indiana accredited is not federally enforceable.

Testing Requirements [326 IAC 2-8-4(3)]

C.9 Performance Testing [326 IAC 3-2.1]

All testing shall be performed according to the provisions of 326 IAC 3-2.1 (Source Sampling Procedures), utilizing methods approved by the IDEM, OAM.

The test protocol 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.[326 IAC 3-2.1-2(a)]

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

C.10 Compliance Monitoring [326 IAC 2-8-4(3)] [326 IAC 2-8-5(a)(1)]

Compliance with applicable requirements shall be documented in accordance with the provisions of 326 IAC 2-8-4(3). 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 Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

in writing no more than ninety (90) days after receipt of this permit, with full justification of the reasons for 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.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(33).

C.11 Maintenance of Monitoring Equipment [326 IAC 2-8-4(3)(A)(iii)]

- (a) The Permittee shall perform all necessary maintenance and make all necessary and reasonable attempts to keep all required monitoring equipment in proper operating condition at all times.
- (b) In the event that a breakdown of the monitoring equipment occurs, a record shall be made of the times and reasons of the breakdown and efforts made to correct the problem. To the extent practicable, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less frequent than required in Section D of this permit until such time as the monitoring equipment is back in operation. In the case of continuous monitoring, supplemental or intermittent monitoring of the parameter should be implemented at intervals no less than one (1) hour until such time as the continuous monitor is back in operation.
- (c) The Permittee shall install, calibrate, quality assure, maintain, and operate all necessary monitors and related equipment.
- (d) Preventive Maintenance Plans of the monitors shall be implemented. In addition, prompt corrective action shall be initiated whenever indicated.

C.12 Monitoring Methods [326 IAC 3]

Any monitoring or testing performed to meet the requirements of this permit shall be performed, whenever applicable according to the provisions of 326 IAC 3, or 40 CFR 60, Appendix A, as appropriate, unless some other method is specified in this permit.

C.13 Pressure Gauge and Flow Meter Specifications

Whenever a condition in this permit requires the taking of scrubbant flow rate and pressure drop across any part of the unit or its control device (i.e., wet scrubber), 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.

C.14 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18-1] [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) Written notification is to be 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 postmark or deliver the notice 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

- (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 prior to a renovation/demolition the owner or operator must use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Corrective Actions [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

C.15 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 ninety (90) days from the date of issuance of this permit.

- (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.16 Risk Management Plan [326 IAC 2-8-4] [40 CFR 68.215]

If a regulated substance is present in more than the threshold quantity that is subject to 40 CFR 68, 40 CFR 68 is an applicable requirement, and the Permittee shall:

(a) Submit:

- (1) A compliance schedule for meeting the requirements of 40 CFR 68 by the date provided in 40 CFR 68.10(a); or
 - (2) As part of the compliance certification submitted under 326 IAC 2-8-5(a)(1), a certification statement that the source is in compliance with all the requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan (RMP); and
 - (3) A verification to IDEM, OAM, that a RMP or a revised plan was prepared and submitted as required by 40 CFR 68.
- (b) Provide annual certification to IDEM, OAM, that the Risk Management Plan is being properly implemented.

C.17 Compliance Monitoring Plan - Failure to Take Corrective Action [326 IAC 2-8-4(3)]

(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:

- (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) The Preventive Maintenance Plan described in Section B, Preventive

Maintenance Plan, of this permit.

- (b) For each compliance monitoring condition of this permit appropriate corrective actions, as described in the Preventive Maintenance Plan, 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 corrective actions within the prescribed time contained within the Preventive Maintenance Plan shall constitute a violation of the permit unless taking the corrective action set forth in the Preventive Maintenance Plan would be unreasonable.
- (c) After investigating the reason for the excursion, the Permittee may be excused from taking further corrective action for any of the following reasons:
 - (1) The monitoring equipment malfunctioned, giving a false reading. This shall be an excuse from taking further corrective actions providing that prompt action was taken to correct the monitoring equipment.
 - (2) The Permittee has determined that the 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 Permittee determines that the process has already returned to operating within "normal" parameters and no corrective action is required.
- (d) Records shall be kept of all instances in which the action values were not met and of all corrective actions 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.18 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, appropriate corrective actions shall be taken. A description of these corrective actions shall be submitted to IDEM, OAM, within thirty (30) days of receipt of the test results. These corrective actions shall be implemented immediately unless notified by IDEM, OAM, that they are not acceptable. The Permittee shall make every effort to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM, reserves the right to utilize enforcement activities to resolve the non-compliant stack test(s).
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. 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.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.19 Emission Statement [326 IAC 2-6] [326 IAC 2-8-4(3)]

- (a) The Permittee shall submit a certified, annual emission statement that meets the requirements of 326 IAC 2-6 (Emission Reporting). This annual statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-

6-2(8) (Emission Statement Operating Year). The annual statement must be submitted to:

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

- (b) This annual emission statement required by this permit shall be timely if delivered by any method and received and stamped by IDEM, OAM, on or before the date it is due. [326 IAC 2-5-3]

C.20 Monitoring Data Availability

- (a) 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) 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, OAM, 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 in (a) above.

C.21 General Record Keeping Requirements [326 IAC 2-8-4(3)(B)]

- (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.
- (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 any required preventive maintenance and corrective actions that were implemented. Such records shall briefly describe what was done and indicate who did it. Such records may include, but are not limited to: work orders, quality assurance procedures, quality control procedures, operator's standard operating procedures, manufacturer's specifications or their equivalent, and equipment "troubleshooting" guidance.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.22 General Reporting Requirements [326 IAC 2-8-4(3)(C)]

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015
- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be timely if delivered by any method and received and stamped by IDEM, OAM, on or before the date it is due. [326 IAC 2-5-3]
- (c) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
- (d) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (e) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (f) 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.23 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 82.161.

SECTION D.1 FACILITY OPERATION CONDITIONS

One (1) prescreening operation (ID# P01) with a maximum capacity of 25 tons per hour. This operation is not equipped with any control devices.

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Particulate Matter less than 10 microns (PM-10) [326 IAC 2-8-4]

The PM-10 emissions from the prescreening operation shall be limited to 8.6 pounds per hour. Therefore, the Part 70 (326 IAC 2-7) rules do not apply.

D.1.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2 (Particulate emission limitations for process operations), the particulate matter (PM) emissions from the prescreening operation shall not exceed 18.9 pounds per hour.

Compliance Determination Requirements

D.1.3 Testing Requirements [326 IAC 2-8-5(1)]

Testing of this prescreening operation is not specifically required by this permit. However, this does not preclude testing requirements on this facility under 326 IAC 2-1-4(f) and 326 IAC 2-8-4).

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.1.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the prescreening operation.

SECTION D.2 FACILITY OPERATION CONDITIONS

One (1) natural gas-fired fluid-bed dryer (ID# P02), using no. 2 fuel oil as a back-up fuel, with a maximum heating capacity of 8.5 million British thermal units (Btu) per hour and a maximum drying capacity of 25 tons per hour. This facility is equipped with a wet scrubber (ID# E01), which includes a demister, for particulate control and exhausts through stack E01.

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 Particulate Matter less than 10 microns (PM-10) [326 IAC 2-8-4]

The PM-10 emissions from the fluid-bed dryer shall be limited to 2.9 pounds per hour by operating a wet scrubber according to the compliance monitoring plan. Therefore, the Part 70 (326 IAC 2-7) rules do not apply.

D.2.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2 (Particulate emission limitations for process operations), the particulate matter (PM) emissions from the fluid-bed dryer shall not exceed 18.9 pounds per hour.

D.2.3 Sulfur Dioxide (SO₂) [326 IAC 7-1.1-1]

Pursuant to 326 IAC 7-1.1 (SO₂ Emissions Limitations) the SO₂ emissions from the fluid-bed dryer shall not exceed five tenths (0.5) pounds per million Btu heat input.

Compliance Determination Requirements

D.2.4 Testing Requirements [326 IAC 2-8-5(1)]

That within 180 days after issuance of this permit, the Permittee shall perform PM and PM-10 (filterable and condensable) tests utilizing methods per 40 CFR Part 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner. This test shall be performed to demonstrate compliance with operation conditions D.2.1 and D.2.2 and to establish the pressure drop (inlet/outlet differential static pressure) range across the wet scrubber and scrubbant flow rate that will achieve a minimum control efficiency that corresponds to the PM-10 and PM emission limits.

D.2.5 Sulfur Dioxide Emissions and Sulfur Content

Compliance with condition D.2.3 shall be determined utilizing one of the following options.

- (a) Pursuant to 326 IAC 3-3-4, the Permittee shall demonstrate that the fuel oil sulfur content does not exceed five-tenths percent (0.5%) by weight by:
 - (1) Providing vendor analysis of fuel delivered, if accompanied by a certification;
 - (2) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.
 - (A) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and
 - (B) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon filling; or
- (b) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the fluid-bed dryer, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-2.1.

A determination of noncompliance pursuant to either of the methods specified in (a) or (b) above shall not be refuted by evidence of compliance pursuant to the other method.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.2.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the fluid-bed dryer and the wet scrubber.

D.2.7 Daily Visible Emission Notations

That daily visible emission notations at the fluid-bed dryer stack exhaust shall be performed during normal daylight operations. A trained employee will record whether emissions are "normal" or "abnormal". For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start-up or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation specified in the unit specific condition prescribing visible emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of "normal" visible emissions for that specific process. The Preventive Maintenance Plan for the fluid-bed dryer and wet scrubber shall contain troubleshooting contingency and corrective actions for when an "abnormal" emission is observed.

D.2.8 Weekly Visible Emissions Notations

That weekly visible emissions notations similar to 40 CFR 60, Appendix A, Method 22 on the external scrubber unit for evidence of fugitive emissions, holes, corrosion, audible leaks, and the like, shall be performed. This does not require the use of a certified visible emissions reader.

The Preventive Maintenance Plan for the wet scrubber shall contain troubleshooting contingency and corrective actions for when visible emissions are observed.

D.2.9 Pressure Drop and Scrubbant Flow Rate Readings

That the Permittee shall take pressure and scrubbant (water) flow rate readings from the wet scrubber, at least once per shift, when the fluid-bed dryer is in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the wet scrubber and the scrubbant flow rate shall be maintained within the ranges established during the latest stack test. The Preventive Maintenance Plan for the wet scrubber shall contain troubleshooting contingency and corrective actions for when the pressure reading or scrubbant flow rate is outside of the range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Flow Meter Specifications, be subject to approval by IDEM, OAM, and shall be calibrated at least once every six months.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.2.10 Record Keeping Requirements

(a) Wet Scrubber Operational Parameters

The following records shall be maintained to demonstrate on-going compliance with operation conditions D.2.1 and D.2.2.

- (1) scrubbant flow rate;
- (2) pressure drop across the scrubber;
- (3) visible emission notations

- (4) checklist with dates and initials for each Preventive Maintenance Plan action performed

Records of corrective actions shall be kept on a form approved by IDEM and shall be kept for at least 5 years and made available upon IDEM's request.

(b) #2 Distillate Fuel Oil Parameters

Whenever item (a) of condition D.2.5 is chosen to determine compliance with condition D.2.3, the Permittee shall maintain monthly records at the stationary source of the following values:

- (1) Amount of fuel oil used;
- (2) Average sulfur content of the fuel oil used;
- (3) Average higher heating value of the fuel oil used;
- (4) Average sulfur dioxide emission rate (expressed in pounds per million Btu).

Records of sulfur content and higher heating value can be determined by information as obtained by the vendor.

D.2.11 Reporting Requirements

That a summary to document compliance with operation conditions D.2.3 shall be submitted upon request to the address listed in Section C - General Reporting Requirements, within thirty (30) days after the day of the request. The reports shall include items b(1) through b(4) of condition D.2.10. Records of sulfur content and higher heating value can be determined by information as obtained by the vendor.

SECTION D.3 FACILITY OPERATION CONDITIONS

Processing Area

This area has a maximum processing capacity of 25 tons per hour and includes two (2) crushers (ID#s P03 and P06), four (4) screens (ID#s P04, P05, P07, and P09), four (4) enclosed bucket elevators (ID#s M05, M10, M12, and M15), a conveying system, blending silos (ID# M06), and product storage silos (ID# M16). This area is equipped with a wet scrubber (ID# E02), which includes a demister, for particulate control and exhausts through stack E02.

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.3.1 Particulate Matter less than 10 microns (PM-10)

The PM-10 emissions from the processing area shall be limited to 9.9 pounds per hour by operating a wet scrubber according to the compliance monitoring plan. Therefore, the Part 70 (326 IAC 2-7) rules do not apply.

D.3.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3-2 (Particulate emission limitations for process operations), the particulate matter (PM) emissions from the fluid-bed dryer shall not exceed 18.9 pounds per hour.

Compliance Determination Requirements

D.3.3 Testing Requirements [326 IAC 2-8-5(1)]

That within 180 days after issuance of this permit, the Permittee shall perform PM and PM-10 (filterable and condensable) tests utilizing methods per 40 CFR Part 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner. This test shall be performed to determine compliance with operation conditions D.3.1 and D.3.2 and to establish the pressure drop (inlet/outlet differential static pressure) range across the wet scrubber and scrubbing flow rate that will achieve a minimum control efficiency that corresponds to the PM-10 and PM emission limits.

Compliance Monitoring Requirements [326 IAC 2-8-4] [326 IAC 2-8-5(a)(1)]

D.3.4 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the processing area and the wet scrubber.

D.3.5 Daily Visible Emission Notations

That daily visible emission notations at the processing area stack exhaust shall be performed during normal daylight operations. A trained employee will record whether emissions are "normal" or "abnormal". For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start-up or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation specified in the unit specific condition prescribing visible emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of "normal" visible emissions for that specific process. The Preventive Maintenance Plan for the processing area and the wet scrubber shall contain troubleshooting contingency and corrective actions for when an "abnormal" emission is observed.

D.3.6 Weekly Visible Emissions Notations

That weekly visible emissions notations similar to 40 CFR 60, Appendix A, Method 22 on the external scrubber unit for evidence of fugitive emissions, holes, corrosion, audible leaks, and the like, shall be performed. This does not require the use of a certified visible emissions reader.

The Preventive Maintenance Plan for the wet scrubber shall contain troubleshooting contingency and corrective actions for when visible emissions are observed.

D.3.7 Pressure Drop and Scrubbant Flow Rate Readings

That the Permittee shall take pressure and scrubbant (water) flow rate readings from the wet scrubber, at least once per shift, when the processing area is in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the wet scrubber and the scrubbant flow rate shall be maintained within the ranges established during the latest stack test. The Preventive Maintenance Plan for the wet scrubber shall contain troubleshooting contingency and corrective actions for when the pressure reading or scrubbant flow rate is outside of the range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Flow Meter Specifications, be subject to approval by IDEM, OAM, and shall be calibrated at least once every six months.

Record Keeping Requirement [326 IAC 2-8-4(3)] [326 IAC 2-8-16]

D.3.8 Record Keeping Requirements

The following records shall be maintained to demonstrate on-going compliance with operation conditions D.3.1 and D.3.2.

- (a) scrubbant flow rate;
- (b) pressure drop across the scrubber;
- (c) visible emission notations
- (d) checklist with dates and initials for each Preventive Maintenance Plan action performed

Records of corrective actions shall be kept on a form approved by IDEM and shall be kept for at least 5 years and made available upon IDEM's request.

SECTION D.4 FACILITY OPERATION CONDITIONS

insignificant activities:

The following equipment related to the manufacturing activities not resulting in the emissions of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment.

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.4.1 Particulate Matter less than 10 microns (PM-10)

The total PM-10 emissions from these insignificant activities shall be limited to 1.1 pounds per hour. Therefore, the Part 70 (326 IAC 2-7) rules do not apply.

D.4.2 Particulate Matter (PM) [326 IAC 6-3-2(c)]

Pursuant to 326 IAC 6-3 (Process Operations), the allowable PM emission rate from these insignificant activities shall not exceed allowable PM emission rate based on the following equation:

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

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Compliance Determination Requirements

D.4.3 Testing Requirements [326 IAC 2-8-5(1)]

Testing of this facility is not specifically required by this permit. However, this does not preclude testing requirements on this facility under 326 IAC 2-1-4(f) and 326 IAC 2-8-4(1).

State Form 47738 (5-96)

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
CERTIFICATION**

Source Name: Reed Minerals - A Harsco Company, Plant No. 11
Source Address: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
Mailing Address: P.O. Box 67, Shelburn, Indiana 47879-0067
FESOP No.: F153-7700-00012

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

Please check what document is being certified:

- 9 Annual Compliance Certification Letter
- 9 Deviation Occurrence Reporting Form (For Control Equipment Monitoring)
- 9 Deviation Occurrence Reporting Form (For Material Usage, Quality, Etc.)
- 9 Test Result (specify) _____
- 9 Report (specify) _____
- 9 Notification (specify) _____
- 9 Other (specify) _____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Date:

State Form 47739 (5-96)

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
 DEVIATION OCCURRENCE REPORT
 (For Control Equipment Monitoring Only)**

Source Name: Reed Minerals - A Harsco Company, Plant No. 11
 Source Address: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
 Mailing Address: P.O. Box 67, Shelburn, Indiana 47879-0067
 FESOP No.: F153-7700-00012

If a deviation has occurred, a separate copy of this report must be submitted for **each** monitoring device on all control equipment listed in this permit. Attach a signed certification to complete this report.

Stack/Vent ID:	
Control Equipment: (ex: thermal oxidizer, scrubber, baghouses)	
Type of Parameter Monitored: (ex: temperature, pressure drop, efficiency)	
<input type="checkbox"/> Continuously	<input checked="" type="checkbox"/> Periodically, at a frequency of:
Parameter Operating Restrictions/Range: (ex: 1,400°F, 2-4 psi pressure drop)	
Report Covers From: (date: month/day/yr)	To:
<input checked="" type="checkbox"/> Summary of Deviations from the Parameter Restriction/Range During the Monitoring Period are Identified Below. Complete Records Maintained at the Facility.	

	For Parameter Recorded Continuously	For Parameter Recorded Periodically
Total Unit Operating Time		
Total Time of Deviations (Identify All Deviations)		
Percent of Time Indicating Deviations ($\frac{[2]}{[1]} \times 100$)		

Date of Deviation	Start/Stop Time of Deviation (Continuous Monitoring Only)	Actual Value Recorded	Reason for Deviation & Corrective Action Taken

State Form 47741 (5-96)

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION**

**FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
DEVIATION OCCURRENCE REPORT**

Source Name: Reed Minerals - A Harsco Company, Plant No. 11
Source Address: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
Mailing Address: P.O. Box 67, Shelburn, Indiana 47879-0067
FESOP No.: F153-7700-00012

If a deviation has occurred a separate copy of this report must be submitted for **each** material type, quantity usage and operation limitation (except control equipment monitoring) listed in this permit .
Attach a signed certification to complete this report.

Stack/Vent ID:
Equipment/Operation:
Parameter Subject to Material Type, Quantity Usage or Operation Limitations Specified in the Permit: (ex: 2500 lb/day, 300 hours/yr, 5000 gallons/month)
Determination Period for this Parameter: (ex: 365-day rolling sum, fixed monthly rate)
9 Permit Has No Rate Limitations for this Parameter.
Content Restriction for this Parameter: (ex: maximum of 40% VOC in inks, 0.5% sulfur content)
Demonstration Method for this Parameter: (ex: MSDS, Supplier, material sampling & analysis)
9 Permit Has No Content Limitations for this Parameter.
Comments:

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

Addendum to the
Technical Support Document for Federally Enforceable State Operating Permit
(FESOP)

**Reed Minerals - A Harsco Company, Plant No. 11
8317 North U.S. Highway 41
Shelburn, Indiana 47879-0067**

F-153-7700, Plt ID-153-00012

On August 28, 1997, the Office of Air Management (OAM) had a notice published in the Sullivan Daily Times, Sullivan, Indiana, stating that Reed Minerals - A Harsco Company, Plant No. 11 had applied for a Federally Enforceable State Operating Permit (FESOP) to operate a coal slag (boiler slag) processing plant with control. The notice also stated that OAM proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

The following minor changes were made to the permit:

1. The company name was fixed to reflect proper letter capitalization.
2. The description of the Processing Area under sections A.2 and D.3 was revised to include its maximum processing capacity of 25 tons per hour.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Federally Enforceable State Operating Permit (FESOP)

Source Background And Description

Source Name: Reed Minerals - a harsco company, Plant No. 11
Source Location: 8317 North U.S. Highway 41, Shelburn, IN 47879
County: Sullivan County
SIC Code: 3295
Operation Permit No.: F153-7700-00012
Permit Reviewer: Marco A. Salenda

The Office of Air Management (OAM) has reviewed a Federally Enforceable State Operating Permit (FESOP) application from Reed Minerals - a harsco company, Plant No. 11, relating to the operation of a coal slag (boiler slag) processing plant with a maximum processing capacity of 25 tons per hour. This plant dries, crushes, screens, and blends the coal slag for the purpose of producing shot blasting abrasives and roofing granules by other companies.

Permitted Emission Units and Pollution Control Equipment

The source consists of the following permitted emission units and pollution control devices:

- (a) One (1) prescreening operation (ID# P01) with a maximum capacity of 25 tons per hour. This operation is not equipped with any control devices;
- (b) One (1) natural gas-fired fluid-bed dryer (ID# P02), using no. 2 fuel oil as a back-up fuel, with a maximum heating capacity of 8.5 million British thermal units (Btu) per hour and a maximum drying capacity of 25 tons per hour. This facility is equipped with a wet scrubber (ID# E01), which includes a demister, for particulate control and exhausts through stack E01;
- (c) Processing Area
This includes two (2) crushers (ID#s P03 and P06), four (4) screens (ID#s P04, P05, P07, and P09), four (4) enclosed bucket elevators (ID#s M05, M10, M12, and M15), a conveying system, blending silos (ID# M06), and product storage silos (ID# M16). This area is equipped with a wet scrubber (ID# E02), which includes a demister, for particulate control and exhausts through stack E02.

Unpermitted Emission Units and Pollution Control Equipment

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

Emission Units and Pollution Control Equipment Under Enhanced New Source Review (ENSR)

There are no new facilities to be reviewed under the ENSR process.

Insignificant Activities

The source also consists of the following insignificant activities, as defined in 326 IAC 2-7-1(20):

- (a) Propane or liquefied petroleum gas, or butane-fired combustion units with heat input equal to or less than six million (6,000,000) Btu per hour;
- (b) Equipment powered by internal combustion engines of capacity equal to or less than five hundred thousand (500,000) Btu per hour, except where total capacity of equipment operated by one stationary source exceeds two million (2,000,000) Btu per hour;
- (c) Combustion source flame safety purging on start up;
- (d) A petroleum fuel, other than gasoline, dispensing facility, having a storage capacity less than or equal to ten thousand five hundred (10,500) gallons, and dispensing less than or equal to two hundred thirty thousand (230,000) gallons per month;
- (e) Vessels storing lubricating oils, hydraulic oils, machining oils, and machining fluids;
- (f) Packaging lubricants and greases;
- (g) Filling drums, pails or other packaging containers with lubricating oils, waxes, and greases;
- (h) The following equipment related to the manufacturing activities not resulting in the emissions of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment. (Note: These insignificant activities have applicable requirements in section D.4 of the FESOP.);
- (i) Paved and unpaved roads and parking lots with public access;
- (j) Equipment used to collect any material that might be released during a malfunction, process upset, or spill clean-up, including catch tanks, temporary liquid separators, tanks, and fluid handling equipment; and
- (k) Blowdown for any of the following: sight glass, boiler, compressors, pumps, and cooling tower.

Existing Approvals

This source has been operating under Operation Permit No. 77-08-90-0054, which was issued on February 10, 1987.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

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

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An administratively complete FESOP application for the purposes of this review was received on

December 13, 1996. Additional information was received on June 9, 1997.

Emissions Calculations

See Appendices A1 through A4: Emissions Calculations for detailed calculations.

Potential Emissions

Pursuant to 326 IAC 1-2-55, Potential Emissions are defined as "emissions of any one (1) pollutant which would be emitted from a facility, if that facility were operated without the use of pollution control equipment unless such control equipment is necessary for the facility to produce its normal product or is integral to the normal operation of the facility."

Pollutant	Potential Emissions (tons/year)
PM	1323
PM-10	1314
SO ₂	11
VOC	0.2
CO	1.3
NO _x	5.3

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

See attached spreadsheets for detailed calculations.

HAP	Potential Emissions (tons/year)
single	0.0
TOTAL	0.0

- (a) The potential emissions (as defined in the Indiana Rule) of PM-10 are greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.
- (b) This source, otherwise required to obtain a Title V permit, has agreed to accept a permit with federally enforceable limits that restrict its PTE to below the Title V emission levels. Therefore, this source will be issued a Federally Enforceable State Operating Permit (FESOP), pursuant to 326 IAC 2-8.
- (c) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter emissions are not counted toward determination of PSD and Title V applicability.

Limited Potential To Emit

- (a) The source has accepted a federally enforceable limit on potential to emit PM-10 of 99 tons per year, consisting of:
 - (1) 94 tons per year for the significant activities; and
 - (2) 5 tons per year for the insignificant activities.
- (b) The table below summarizes the total limited potential to emit of the significant and

insignificant emission units.

Process/ facility	Limited Potential to Emit (tons/year)						
	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Prescreening	18	38 (37.8)	---	---	---	---	---
Fluid-Bed Dryer (ID# P01), including fuel combustion	3.0	13 (12.7)	19	0.2	1.3	5.3	0.0
Processing Area	10	44 (43.6)	---	---	---	---	---
Insignificant Activities	5.0	5.0	---	---	---	---	---
Total Source Emissions	36	99 (98.9)	19	0.2	1.3	5.3	0.0
Total Limited PTE	249	99	---	---	---	---	---

Attached Tables 1 and 2 summarize the permit conditions and requirements.

County Attainment Status

The source is located in Sullivan County.

Pollutant	Status
TSP	attainment
PM-10	attainment
SO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and oxides of nitrogen are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Sullivan County has been designated as attainment or unclassifiable for ozone.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (326 IAC 12) applicable to any of the facilities at this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) applicable to any of the facilities at this source.

State Rule Applicability - Entire Source

- (a) 326 IAC 2-6 (Emission Reporting)
 This source is not subject to 326 IAC 2-6 (Emission Reporting), because it has potential

to emit less than one hundred (100) tons per year of PM-10, including fugitive emissions.

- (b) 326 IAC 4 (Open Burning)
This rule requires that 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 source is currently in compliance with this rule.
- (c) 326 IAC 4-2 (Incineration) and 326 IAC 9-1-2(3)
This rule requires that the permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 326 IAC 9-1-2(3). The source is currently in compliance with this rule.
- (d) 326 IAC 5-1 (Visible Emissions Limitations)
Pursuant to 326 IAC 5-1-2 (Visible Emissions Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), visible emissions shall meet the following, unless otherwise stated in this permit:
 - (1) Visible emissions shall not exceed an average of forty percent (40%) opacity in twenty-four (24) consecutive readings as determined by 326 IAC 5-1-4,
 - (2) Visible emissions shall not exceed sixty percent (60%) opacity for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) in a six (6) hour period.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions)
This rule requires the source not to generate fugitive dust to the extent that some portion of the material escapes beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located.
- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
This rule requires a fugitive dust plan to be submitted. The plan, which was submitted on December 13, 1996, was reviewed, and approved. The source shall comply with all dust abatement measures contained therein, which includes, but not limited to, applying water on storage piles, unpaved roadways, material loading and unloading operations on an "as-needed" basis such that the following visible emission conditions are met:
 - (1) Visible emissions from storage piles shall not exceed twenty percent (20%) in twenty four (24) consecutive readings in a six (6) minute period. This limitation may not apply during periods when application of control measures are ineffective or unreasonable due to sustained very high wind speeds. The opacity shall be determined using 40 CFR 60, Appendix A, Method 9, except that the opacity shall be observed at approximately four (4) feet from the surface at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.
 - (2) Visible emissions from unpaved roadways shall not exceed an average instantaneous opacity of twenty percent (20%). Average instantaneous opacity shall be the average of twelve (12) instantaneous opacity readings, taken for four (4) vehicle passes, consisting of three (3) opacity readings for each vehicle pass. The three (3) opacity readings for each vehicle pass shall be taken as follows:

- (A) The first will be taken at the time of emission generation.
- (B) The second will be taken five (5) seconds later.
- (C) The third will be taken five (5) seconds later or ten (10) seconds after the first.

The three (3) readings shall be taken at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume. Each reading shall be taken approximately four (4) feet above the surface of the unpaved roadway.

- (3) Visible emissions from the material loading and unloading operation shall not exceed an average instantaneous opacity of twenty percent (20%). The average instantaneous opacity shall be the average of three (3) opacity readings taken five (5) seconds, ten (10) seconds, and fifteen (15) seconds after the end of one (1) material loading or unloading operation. The three (3) readings shall be taken at the point of maximum opacity. The observer shall stand at least fifteen (15) feet, but no more than one-fourth (1/4) mile, from the plume and at approximately right angles to the plume.

Compliance with these opacity limitations shall also meet the requirements of 326 IAC 5-

State Rule Applicability - Individual Facilities

(a) 326 IAC 6-3-2 (Process Operations)

- (1) This rule requires that the particulate matter (PM) emissions from each of the prescreening operation (ID# P01), fluid-bed dryer (ID# P02) and processing area to not exceed 35.4 pounds per hour. But since this limit would exceed the 250 tons per year major source threshold under the PSD Rule (326 IAC 2-2), this limit is truncated to 18.9 pounds per hour.
- (2) This rule requires that the particulate matter (PM) emissions from the following equipment related to the manufacturing activities not resulting in the emissions of HAPs: brazing equipment, cutting torches, soldering equipment, and welding equipment (insignificant activities) to not exceed allowable PM emission rate based on the following equation:

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

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

(b) 326 IAC 7 (Sulfur Dioxide Rules)

This rule requires that sulfur dioxide emissions from the fluid-bed dryer (ID# P02), when fired by no. 2 fuel oil, to not exceed 0.5 pounds per million Btu (lb/MMBtu) heat input.

Compliance Requirements

Permits issued under 326 IAC 2-8 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill

the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-8-4. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

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

(a) The compliance determination requirements applicable to this source are as follows:

(1) The fluid-bed dryer has applicable compliance determination conditions as specified below:

(A) Testing Requirements [326 IAC 2-8-5(1)]

That within 180 days after issuance of this permit, the Permittee shall perform PM and PM-10 (filterable and condensable) tests utilizing methods per 40 CFR Part 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner. This test shall be performed to establish the pressure drop (inlet/outlet differential static pressure) range across the wet scrubber and scrubbant flow rate that will achieve a minimum control efficiency that corresponds to the PM-10 and PM emission limits established under 326 IAC 2-8 (FESOP Rule) and 326 IAC 6-3-2 (Emission Limitations for Process Operations), respectively.

(B) Sulfur Dioxide Emissions and Sulfur Content

Compliance with the SO₂ limit under 326 IAC 7-1.1 shall be determined utilizing one of the following options.

(i) Pursuant to 326 IAC 3-3-4, the Permittee shall demonstrate that the fuel oil sulfur content does not exceed five-tenths of a percent (0.5%) by weight by:

(aa) Providing vendor analysis of fuel delivered, if accompanied by a certification;

(bb) Analyzing the oil sample to determine the sulfur content of the oil via the procedures in 40 CFR 60, Appendix A, Method 19.

(AA) Oil samples may be collected from the fuel tank immediately after the fuel tank is filled and before any oil is combusted; and

(BB) If a partially empty fuel tank is refilled, a new sample and analysis would be required upon

filling; or

- (ii) Compliance may also be determined by conducting a stack test for sulfur dioxide emissions from the fluid-bed dryer, using 40 CFR 60, Appendix A, Method 6 in accordance with the procedures in 326 IAC 3-2.1.

A determination of noncompliance pursuant to either of the methods specified in (i) or (ii) above shall not be refuted by evidence of compliance pursuant to the other method.

- (2) The processing area has applicable compliance determination conditions as specified below:

- (A) Testing Requirements [326 IAC 2-8-5(1)]

That within 180 days after issuance of this permit, the Permittee shall perform PM and PM-10 (filterable and condensible) tests utilizing methods per 40 CFR Part 60 Appendix A, Method 5, 17, 40 CFR Part 51 Appendix M, Method 201, 201a, 202, as approved by the Commissioner. This test shall be performed to establish the pressure drop (inlet/outlet differential static pressure) range across the wet scrubber and scrubbant flow rate that will achieve a minimum control efficiency that corresponds to the PM-10 and PM emission limits established under 326 IAC 2-8 (FESOP Rule) and 326 IAC 6-3-2 (Emission Limitations for Process Operations), respectively.

- (b) The compliance monitoring requirements applicable to this source are as follows:

- (1) The fluid-bed dryer and processing area have applicable compliance monitoring conditions as specified below:

- (A) Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for the fluid-bed dryer, processing area, and wet scrubbers.

- (B) Daily Visible Emission Notations

That daily visible emission notations at the fluid-bed dryer stack exhaust and processing area stack exhaust shall be performed during normal daylight operations. A trained employee will record whether emissions are "normal" or "abnormal". For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start-up or shut down time. In the case of batch or discontinuous operations, readings shall be taken during that part of the operation specified in the unit specific condition prescribing visible emissions. A trained employee is an employee who has worked at the plant at least one month and has been trained in the appearance and characteristics of "normal" visible emissions for that specific process. The Preventive Maintenance Plan for the fluid-bed dryer, processing area and wet scrubbers shall contain troubleshooting contingency and corrective actions for when an "abnormal" emission is observed.

- (C) Weekly Visible Emissions Notations
That weekly visible emissions notations similar to 40 CFR 60, Appendix A, Method 22 on the external scrubber unit for evidence of fugitive emissions, holes, corrosion, audible leaks, and the like, shall be performed. This does not require the use of a certified visible emissions reader.

The Preventive Maintenance Plan for the wet scrubbers shall contain troubleshooting contingency and corrective actions for when visible emissions are observed.

- (D) Pressure Drop and Scrubbant Flow Rate Readings
That the Permittee shall take pressure and scrubbant (water) flow rate readings from each of the wet scrubbers, at least once per shift, when the fluid-bed dryer and processing area are in operation. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across each of the wet scrubbers and the scrubbant flow rate shall be maintained within the ranges established during the latest stack test. The Preventive Maintenance Plan for the wet scrubbers shall contain troubleshooting contingency and corrective actions for when the pressure reading or scrubbant flow rate is outside of the range for any one reading.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Flow Meter Specifications, be subject to approval by IDEM, OAM, and shall be calibrated at least once every six months.

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) FESOP Application Form GSD-08.

None of these listed air toxics will be emitted from this source.

Conclusion

The operation of this coal slag (boiler slag) processing plant will be subject to the conditions of the attached proposed **FESOP No. F153-7700-00012**.

Table (1)

Stack/Vent ID:	E01			
Stack/Vent Dimensions:	Ht: 20.3 ft	Dia: 2 ft	Temp: 120 °F	Flow: 11,000 acfm
Emission Unit:	natural gas/no.2 fuel oil fired fluid-bed dryer (ID# P02)			
Date of Construction:	June 1986			
Alternative Scenario:	none			
Pollution Control Equipment:	wet scrubber (ID# E01)			
General Description of Requirement:	PM-10 limit	PM limit	SO ₂ limit when burning fuel oil	
Numerical Emission Limit:	2.9 lb/hr	28.4 lb/hr	0.5 lb/MMBtu	
Regulation/Citation:	326 IAC 2-8-4	326 IAC 6-3-2	326 IAC 7-1.1	
Compliance Demonstration:	testing and compliance monitoring	testing and compliance monitoring	fuel analysis or stack testing	
PERFORMANCE TESTING				
Parameter/Pollutant to be Tested:	PM-10 emissions	PM emissions	If a stack test is performed, SO ₂ emissions	
Testing Method/Analysis:	any pre-approved method	any pre-approved method	any pre-approved method	
Testing Frequency/Schedule:	within 180 days after permit issuance	within 180 days after permit issuance	within 180 days after permit issuance	
Submittal of Test Results:	within 45 days after the date of testing	within 45 days after the date of testing	within 45 days after the date of testing	
COMPLIANCE MONITORING				
Monitoring Description:	(a) visible emission notations (normal or abnormal), (b) scrubber leaks, (c) parametric monitoring	(a) visible emission notations (normal or abnormal), (b) scrubber leaks, (c) parametric monitoring	if fuel analysis is performed, record keeping and reporting of fuel oil parameters	
Monitoring Method:	---	---	---	
Monitoring Regulation/Citation:	---	---	---	
Monitoring Frequency:	(a) daily, (b) weekly, (c) once per shift	(a) daily, (b) weekly, (c) once per shift	monthly	
RECORD KEEPING				
Parameter/Pollutant to be Recorded:	(a) visible emissions (normal or abnormal), (b) scrubber leaks, (c) pressure drop and scrubbant flow rate	(a) visible emissions (normal or abnormal), (b) scrubber leaks, (c) pressure drop and scrubbant flow rate	(a) calendar month average sulfur content, (b) calendar month average higher heating value of fuel oil used, (c) monthly fuel oil consumption, (d) calendar month average SO ₂ emissions in lb/MMBtu	
Recording Frequency:	(a) daily, (b) weekly, (c) once per shift	(a) daily, (b) weekly, (c) once per shift	monthly	
REPORTING REQUIREMENTS				
Information in Report:	time and duration of all instances of readings that were outside of the indicated performance ranges	time and duration of all instances of readings that were outside of the indicated performance ranges	(a) calendar month average sulfur content, (b) calendar month average higher heating value of fuel oil used, (c) monthly fuel oil consumption, (d) calendar month average SO ₂ emissions in lb/MMBtu	
Reporting Frequency/Submittal:	quarterly	quarterly	upon request	
Additional Comments:	none	none		

Table (2)

Stack/Vent ID:	E02			
Stack/Vent Dimensions:	Ht: 28.5 ft	Dia: 3.25 ft x 2.3 ft	Temp: ambient	Flow: 23,000 acfm
Emission Unit:	processing area			
Date of Construction:	June 1986			
Alternative Scenario:	none			
Pollution Control Equipment:	wet scrubber (ID# E02)			
General Description of Requirement:	PM-10 limit	PM limit		
Numerical Emission Limit:	9.9 lb/hr	28.4 lb/hr		
Regulation/Citation:	326 IAC 2-8-4	326 IAC 6-3-2		
Compliance Demonstration:	testing and compliance monitoring	testing and compliance monitoring		
PERFORMANCE TESTING				
Parameter/Pollutant to be Tested:	PM-10 emissions	PM emissions		
Testing Method/Analysis:	any pre-approved method	any pre-approved method		
Testing Frequency/Schedule:	within 180 days after permit issuance	within 180 days after permit issuance		
Submittal of Test Results:	within 45 days after the date of testing	within 45 days after the date of testing		
COMPLIANCE MONITORING				
Monitoring Description:	(a) visible emission notations (normal or abnormal), (b) scrubber leaks, (c) parametric monitoring	(a) visible emission notations (normal or abnormal), (b) scrubber leaks, (c) parametric monitoring		
Monitoring Method:	---	---		
Monitoring Regulation/Citation:	---	---		
Monitoring Frequency:	(a) daily, (b) weekly, (c) once per shift	(a) daily, (b) weekly, (c) once per shift		
RECORD KEEPING				
Parameter/Pollutant to be Recorded:	(a) visible emissions (normal or abnormal), (b) scrubber leaks, (c) pressure drop and scrubbant flow rate	(a) visible emissions (normal or abnormal), (b) scrubber leaks, (c) pressure drop and scrubbant flow rate		
Recording Frequency:	(a) daily, (b) weekly, (c) once per shift	(a) daily, (b) weekly, (c) once per shift		
REPORTING REQUIREMENTS				
Information in Report:	time and duration of all instances of readings that were outside of the indicated performance ranges	time and duration of all instances of readings that were outside of the indicated performance ranges		
Reporting Frequency/Submittal:	quarterly	quarterly		
Additional Comments:	none	none		

Appendix A4: Emissions Summary

Company Name: Reed Minerals - a harsco company, Plant No. 11
 Plant Location: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
 County: Sullivan
 FESOP No.: F 153-7700-00012
 Date Reviewed: June 2, 1997
 Permit Reviewer: Marco A. Salenda

Pollutant	Potential Emissions		Allowable Emissions (tons/yr)
	Before Ctrl (tons/yr)	After Ctrl (tons/yr)	
PM	1323.3	31.1	249
PM-10	1314.4	22.3	99
SO2	11.3	11.3	18.6
NOx	5.3	5.3	5.3
VOC	0.2	0.2	0.2
CO	1.3	1.3	1.3

Appendix A2: PM Potential and Allowable Emission Calculations

Company Name: Reed Minerals - a harsco company, Plant No. 11
 Plant Location: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0
 County: Sullivan
 FESOP No.: F 153-7700-00012
 Date Reviewed: June 2, 1997
 Permit Reviewer: Marco A. Salenda

I. Potential Emissions

* * emissions before controls * *

Storage Piles			** see page 2 **		
Transporting			** see page 3 **		
Material Handling	25 tons/hr x	8760 hrs/yr x		0.0022 lb/ton	/ 2000 lb/ton =
Prescreening (ID# P01)	25 tons/hr x	8760 hrs/yr x		0.16 lb/ton	/ 2000 lb/ton =
Fluid-Bed Dryer (ID# P02)	25 tons/hr x	8760 hrs/yr x		2.69 lb/ton	/ 2000 lb/ton =
Processing Equipment (ID# E02)	25 tons/hr x	8760 hrs/yr x		9.23 lb/ton	/ 2000 lb/ton =
<hr/>					
Total emissions before controls:					

* * emissions after controls * *

Storage Piles	2.0 tons/yr x	10% emitted after controls =	0.2 tons/yr
Transporting	148.2 tons/yr x	50% emitted after controls =	74.1 tons/yr
Material Handling	0.2 tons/yr x	50% emitted after controls =	0.1 tons/yr
Prescreening (ID# P01)	17.5 tons/yr x	100% emitted after controls =	17.5 tons/yr
Fluid-Bed Dryer (ID# P02)	294.6 tons/yr x	1% emitted after controls =	2.9 tons/yr
Processing Equipment (ID# E02)	1010.7 tons/yr x	1% emitted after controls =	10.1 tons/yr
<hr/>			
Total emissions after controls:			105.0 tons/yr

Since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, fugitive emissions are not counted toward determination of PSD and Title V applicability.

Prescreening, drying and other process operations are considered nonfugitive. All other emissions are considered fugitive. Pursuant to PSD Rules, 326 IAC 2-2, emissions are as follows:

* * fugitive vs. nonfugitive * *

A. Before Controls

Storage Piles			** see page 2 **		
Transporting			** see page 3 **		
Material Handling	25 tons/hr x	8760 hrs/yr x		0.0022 lb/ton	/ 2000 lb/ton =
<hr/>					
Total fugitive emissions:					
Prescreening (ID# P01)	25 tons/hr x	8760 hrs/yr x		0.16 lb/ton	/ 2000 lb/ton =
Fluid-Bed Dryer (ID# P02)	25 tons/hr x	8760 hrs/yr x		2.69 lb/ton	/ 2000 lb/ton =
Processing Equipment (ID# E02)	25 tons/hr x	8760 hrs/yr x		9.23 lb/ton	/ 2000 lb/ton =
<hr/>					
Total nonfugitive emissions:					

B. After Controls

Storage Piles	2.0 tons/yr x	10% emitted after controls =	0.2 tons/yr
Transporting	148.2 tons/yr x	50% emitted after controls =	74.1 tons/yr
Material Handling	0.2 tons/yr x	50% emitted after controls =	0.1 tons/yr
<hr/>			
Total fugitive emissions:			
74.4 tons/yr			
Prescreening (ID# P01)	17.5 tons/yr x	100% emitted after controls =	17.5 tons/yr
Fluid-Bed Dryer (ID# P02)	294.6 tons/yr x	1% emitted after controls =	2.9 tons/yr
Processing Equipment (ID# E02)	1010.7 tons/yr x	1% emitted after controls =	10.1 tons/yr
<hr/>			
Total nonfugitive emissions:			
30.6 tons/yr			

* * storage * *

Storage emissions, which result from wind erosion, are determined by the following calculations:

A. Coal Slag

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 0.34 \text{ lb/acre/day}$$

where s = 0.29 % silt content of material
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 0.45 \text{ tons/yr}$$

where sc = 200 ,000 tons storage capacity

B. Coal Slag Fines

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 23.15 \text{ lb/acre/day}$$

where s = 20 % silt content of material
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 1.55 \text{ tons/yr}$$

where sc = 10 ,000 tons storage capacity

C. TOTAL PM: 2.00 tons/yr

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 11.2.1.

A. Diesel Truck

$$5.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 35040$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 4.14 \text{ lb/mile}$$

where k = 0.8 (particle size multiplier)

s = 4.8 % silt content of unpaved roads

p = 125 days of rain greater than or equal to 0.01 inches

S = 10 miles/hr vehicle speed

W = 28 tons average vehicle weight

w = 18 wheels

$$\frac{4.14 \text{ lb/mi} \times 35040 \text{ mi/yr}}{2000 \text{ lb/ton}} = 72.52 \text{ tons/yr}$$

B. Front-End Loaders

$$10.0 \text{ trip/hr} \times 0.2 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 35040$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

= 1.59 lb/mile

where k = 0.8 (particle size multiplier)

s = 4.8 % silt content of unpaved roads

p = 125 days of rain greater than or equal to 0.01 inches

S = 10 miles/hr vehicle speed

W = 21 tons average vehicle weight

w = 4 wheels

$$\frac{1.59 \text{ lb/mi} \times 35040 \text{ mi/yr}}{2000 \text{ lb/ton}} = 27.83 \text{ tons/yr}$$

C. Haul Trucks

$$4.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 28032$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

= 3.42 lb/mile

where k = 0.8 (particle size multiplier)

s = 4.8 % silt content of unpaved roads

p = 125 days of rain greater than or equal to 0.01 inches

S = 10 miles/hr vehicle speed

W = 25 tons average vehicle weight

w = 14 wheels

$$\frac{3.42 \text{ lb/mi} \times 28032 \text{ mi/yr}}{2000 \text{ lb/ton}} = 47.87 \text{ tons/yr}$$

D. TOTAL PM:

148.23 tons/yr

* * material handling * *

The following calculations determine the amount of emissions created by truck loading, unloading of aggregate and continuous dropping operations, based on 8760 hours of use and AP-42, Ch 11.2.3.

$$E_f = k \cdot (0.0032) \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

$$= 0.0022 \text{ lb/ton}$$

where k = 0.74 (particle size multiplier)
 U = 10 mile/hr mean wind speed
 M = 4 % material moisture content

II. Allowable Emissions

The following calculations determine PM compliance with 326 IAC 6-3-2 for process weight rates less than or equal to 30 tons

$$\text{limit (lb/hr)} = 4.1 \times (P^{0.67})$$

Process:	Rate, P (tons mat'l/hr)	Allowable PM		Potential PM after ctrls		Status
		(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	
Prescreening (ID# P01)	25.0	35.4	155.2	4.0	17.5	will comply
Fluid-Bed Dryer (ID# P02)	25.0	35.4	155.2	0.7	2.9	will comply
Processing Equipment (ID# E02)	25.0	35.4	155.2	2.3	10.1	will comply
TOTAL		106.3	465.6	7.0	30.6	

Since the total allowable PM emissions exceed the 250 tons per year "major source" threshold for the PSD Rule (326 IAC 2-2), to 249 tons per year. The following table summarizes the truncated allowable PM emissions for each process:

Process:	Truncated Allowable PM		Potential PM after ctrls		Status
	(lb/hr)	(tons/yr)	(lb/hr)	(tons/yr)	
Prescreening (ID# P01)	18.9	83.0	4.0	17.5	will comply
Fluid-Bed Dryer (ID# P02)	18.9	83.0	0.7	2.9	will comply
Processing Equipment (ID# E02)	18.9	83.0	2.3	10.1	will comply
TOTAL	56.8	249.0	7.0	30.6	

2.0 tons/yr	AP-42 Ch.11.2.3
148.2 tons/yr	AP-42 Ch.11.2.1
0.2 tons/yr	AP-42 Ch.11.2.3
17.5 tons/yr	AIRS (March 1990)
294.6 tons/yr	Stack test
<u>1010.7 tons/yr</u>	Stack test
1473.2 tons/yr	

lowable Emission Calculations

2.0 tons/yr
148.2 tons/yr
0.2 tons/yr
150.47 tons/yr

17.5 tons/yr
294.6 tons/yr
1010.7 tons/yr
1322.8 tons/yr

lowable Emission Calculations

miles per year

lowable Emission Calculations

miles per year

miles per year

ns per hour:

this limit is truncated

Appendix A3: PM-10 Emission Calculations

Company Name: Reed Minerals - a harsco company, Plant No. 11
 Plant Location: 8317 North U.S. Highway 41, Shelburn, Indiana 47879
 County: Sullivan
 FESOP No.: F 153-7700-00012
 Date Reviewed: June 2, 1997
 Permit Reviewer: Marco A. Salenda

* * emissions before controls * *

Storage Piles		** see page 2 **			
Transporting		** see page 3 **			
Material Handling	25 tons/hr x	8760 hrs/yr x	0.0010 lb/ton	/ 2000 lb/ton =	
Prescreening (ID# P01)	25 tons/hr x	8760 hrs/yr x	0.08 lb/ton	/ 2000 lb/ton =	
Fluid-Bed Dryer (ID# P02)	25 tons/hr x	8760 hrs/yr x	2.69 lb/ton *	/ 2000 lb/ton =	
Processing Equipment (ID# E02)	25 tons/hr x	8760 hrs/yr x	9.23 lb/ton *	/ 2000 lb/ton =	
<hr/>					
Total emissions before controls:					

* * emissions after controls * *

Storage Piles	2.0 tons/yr x	10% emitted after controls =	0.2
Transporting	66.7 tons/yr x	50% emitted after controls =	33.4
Material Handling	0.1 tons/yr x	50% emitted after controls =	0.1
Prescreening (ID# P01)	8.8 tons/yr x	100% emitted after controls =	8.8
Fluid-Bed Dryer (ID# P02)	294.6 tons/yr x	1% emitted after controls =	2.9
Processing Equipment (ID# E02)	1010.7 tons/yr x	1% emitted after controls =	10.1
<hr/>			
Total emissions after controls:			55.4

Since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, fugitive emissions are not counted toward determination of PSD and Title V applicability.

Prescreening, drying and other process operations are considered nonfugitive. All other emissions are considered fugitive. Pursuant to PSD Rules, 326 IAC 2-2, emissions are as follows:

** fugitive vs. nonfugitive **

A. Before Controls

Storage Piles			** see page 2 **		
Transporting			** see page 3 **		
Material Handling	25 tons/hr x	8760 hrs/yr x	0.0010 lb/ton	/ 2000 lb/ton =	

Total fugitive emissions:

Prescreening (ID# P01)	25 tons/hr x	8760 hrs/yr x	0.08 lb/ton	/ 2000 lb/ton =	
Fluid-Bed Dryer (ID# P02)	25 tons/hr x	8760 hrs/yr x	2.69 lb/ton	/ 2000 lb/ton =	
Processing Equipment (ID# E02)	25 tons/hr x	8760 hrs/yr x	9.23 lb/ton	/ 2000 lb/ton =	

Total nonfugitive emissions:

B. After Controls

Storage Piles	2.0 tons/yr x	10% emitted after controls =	0.2 tons/yr
Transporting	66.7 tons/yr x	50% emitted after controls =	33.4 tons/yr
Material Handling	0.1 tons/yr x	50% emitted after controls =	0.1 tons/yr

Total fugitive emissions:

33.6 tons/yr

Prescreening (ID# P01)	8.8 tons/yr x	100% emitted after controls =	8.8 tons/yr
Fluid-Bed Dryer (ID# P02)	294.6 tons/yr x	1% emitted after controls =	2.9 tons/yr
Processing Equipment (ID# E02)	1010.7 tons/yr x	1% emitted after controls =	10.1 tons/yr

Total nonfugitive emissions:

21.8 tons/yr

** storage **

Storage emissions, which result from wind erosion, are determined by the following calculations:

A. Coal Slag

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 0.34 \text{ lb/acre/day}$$

where s = 0.29 % silt content of material
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 0.45 \text{ tons/yr}$$

where sc = 200 ,000 tons storage capacity

B. Coal Slag Fines

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p)/235 \cdot (f/15)$$

$$= 23.15 \text{ lb/acre/day}$$

where s = 20 % silt content of material
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (365 \text{ day/yr})$$

$$= 1.55 \text{ tons/yr}$$

where sc = 10 ,000 tons storage capacity

C. TOTAL PM: 2.00 tons/yr

The following calculations determine the amount of emissions created by unpaved roads, based on 8760 hours of use and AP-42, Ch 11.2.1.

A. Diesel Truck

$$5.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 35040$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 1.86 \text{ lb/mile}$$

- where k = 0.36 (particle size multiplier)
 s = 4.8 % silt content of unpaved roads
 p = 125 days of rain greater than or equal to 0.01 inches
 S = 10 miles/hr vehicle speed
 W = 28 tons average vehicle weight
 w = 18 wheels

$$\frac{1.86 \text{ lb/mi} \times 35040 \text{ mi/yr}}{2000 \text{ lb/ton}} = 32.64 \text{ tons/yr}$$

B. Front-End Loaders

$$10.0 \text{ trip/hr} \times 0.2 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 35040$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 0.71 \text{ lb/mile}$$

where k = 0.36 (particle size multiplier)

s = 4.8 % silt content of unpaved roads

p = 125 days of rain greater than or equal to 0.01 inches

S = 10 miles/hr vehicle speed

W = 21 tons average vehicle weight

w = 4 wheels

$$\frac{0.71 \text{ lb/mi} \times 35040 \text{ mi/yr}}{2000 \text{ lb/ton}} = 12.53 \text{ tons/yr}$$

C. Haul Trucks

$$4.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 8760 \text{ hr/yr} = 28032$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 1.54 \text{ lb/mile}$$

where k = 0.36 (particle size multiplier)

s = 4.8 % silt content of unpaved roads

p = 125 days of rain greater than or equal to 0.01 inches

S = 10 miles/hr vehicle speed

W = 25 tons average vehicle weight

w = 14 wheels

$$\frac{1.54 \text{ lb/mi} \times 28032 \text{ mi/yr}}{2000 \text{ lb/ton}} = 21.54 \text{ tons/yr}$$

D. TOTAL PM:

66.70 tons/yr

* * material handling * *

The following calculations determine the amount of emissions created by truck loading, unloading of aggregate and continuous dropping operations, based on 8760 hours of use and AP-42, Ch 11.2.3.

$$\begin{aligned} E_f &= k(0.0032)^* (U/5)^{1.3}/(M/2)^{1.4} \\ &= 0.0010 \text{ lb/ton} \\ \text{where } k &= 0.35 \text{ (particle size multiplier)} \\ U &= 10 \text{ mile/hr mean wind speed} \\ M &= 4 \text{ \% material moisture content} \end{aligned}$$

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2.0 tons/yr	AP-42 Ch.11.2.3
66.7 tons/yr	AP-42 Ch.11.2.1
0.1 tons/yr	AP-42 Ch.11.2.3
8.8 tons/yr	AIRS (March 1990)
294.6 tons/yr	Stack test
<u>1010.7 tons/yr</u>	Stack test
1382.8 tons/yr	

tons/yr
tons/yr
tons/yr
tons/yr
tons/yr
tons/yr
tons/yr

J0012

: PM-10 Emission Calculations

2.0 tons/yr
66.7 tons/yr
0.1 tons/yr
68.8 tons/yr

8.8 tons/yr
294.6 tons/yr
1010.7 tons/yr
1314.0 tons/yr

37.8	8.62
12.7	2.90
43.6	9.94
94.0	21.46

J0012

: PM-10 Emission Calculations

miles per year

00012

: PM-10 Emission Calculations

miles per year

miles per year

Appendix A4: Limited PM Emission Calculations

Company Name: Reed Minerals - a harsco company, Plant No. 11
 Plant Location: 8317 North U.S. Highway 41, Shelburn, Indiana 47879
 County: Sullivan
 FESOP No.: F 153-7700-00012
 Date Reviewed: June 2, 1997
 Permit Reviewer: Marco A. Salenda

* * emissions before controls * *

Storage Piles			** see page 2 **		
Transporting			** see page 3 **		
Loading & Unloading	25 tons/hr x	5600 hrs/yr x	0.0022 lb/ton	/ 2000 lb/ton =	
Fluid-Bed Dryer (ID# E01)	25 tons/hr x	5600 hrs/yr x	32 lb/ton *	/ 2000 lb/ton =	
Processing Equipment (ID# E02)	25 tons/hr x	5600 hrs/yr x	85 lb/ton *	/ 2000 lb/ton =	
<hr/>					
Total emissions before controls:					

* * emissions after controls * *

Storage Piles	1.3 tons/yr x	10% emitted after controls =		0.1
Transporting	94.8 tons/yr x	50% emitted after controls =		47.4
Loading & Unloading	0.2 tons/yr x	50% emitted after controls =		0.1
Fluid-Bed Dryer (ID# E01)	2240.0 tons/yr x	1% emitted after controls =		22.4
Processing Equipment (ID# E02)	5950.0 tons/yr x	1% emitted after controls =		59.5
<hr/>				
Total emissions after controls:				129.5

Since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, fugitive emissions are not counted toward determination of PSD and Title V applicability.

Drying and other process operations are considered nonfugitive. All other emissions are considered fugitive. Pursuant to PSD Rules, 326 IAC 2-2, emissions are as follows:

**** fugitive vs. nonfugitive ****

Storage Piles	1.3 tons/yr x	10% emitted after controls =	0.1
Transporting	94.8 tons/yr x	50% emitted after controls =	47.4
Loading / Unloading	0.2 tons/yr x	50% emitted after controls =	0.1
Total fugitive emissions:			47.6
Fluid-Bed Dryer (ID# E01)	2240.0 tons/yr x	1% emitted after controls =	22.4
Processing Equipment (ID# E02)	5950.0 tons/yr x	1% emitted after controls =	59.5
Total nonfugitive emissions:			81.9

**** storage ****

Storage emissions, which result from wind erosion, are determined by the following calculations:

A. Coal Slag

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p) / 235 \cdot (f/15)$$

$$= 0.34 \text{ lb/acre/day}$$

where s = 0.29 % silt content of material
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (233 \text{ day/yr})$$

$$= 0.29 \text{ tons/yr}$$

where sc = 200 ,000 tons storage capacity

B. Coal Slag Fines

$$E_f = 1.7 \cdot (s/1.5) \cdot (365-p) / 235 \cdot (f/15)$$

$$= 23.15 \text{ lb/acre/day}$$

where s = 20 % silt content of material
 p = 125 days of rain greater than or equal to 0.01 inches
 f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (233 \text{ day/yr})$$

$$= 0.99 \text{ tons/yr}$$

where sc = 10 ,000 tons storage capacity

C. TOTAL PM: 1.28 tons/yr

**** unpaved roads ****

The following calculations determine the amount of emissions created by unpaved roads, based on a limited 5600 hours of use and AP-42, Ch 11.2.1.

A. Diesel Truck

$$5.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 5600 \text{ hr/yr} = 22400$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 4.14 \text{ lb/mile}$$

where k = 0.8 (particle size multiplier)
 s = 4.8 % silt content of unpaved roads
 p = 125 days of rain greater than or equal to 0.01 inches

S = 10 miles/hr vehicle speed
 W = 28 tons average vehicle weight
 w = 18 wheels

$$\frac{4.14 \text{ lb/mi} \times 22400 \text{ mi/yr}}{2000 \text{ lb/ton}} = 46.36 \text{ tons/yr}$$

B. Front-End Loaders

$$10.0 \text{ trip/hr} \times 0.2 \text{ mile/trip} \times 2 \text{ (round trip) } \times 5600 \text{ hr/yr} = 22400$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 1.59 \text{ lb/mile}$$

where k = 0.8 (particle size multiplier)
 s = 4.8 % silt content of unpaved roads
 p = 125 days of rain greater than or equal to 0.01 inches
 S = 10 miles/hr vehicle speed
 W = 21 tons average vehicle weight
 w = 4 wheels

$$\frac{1.59 \text{ lb/mi} \times 22400 \text{ mi/yr}}{2000 \text{ lb/ton}} = 17.79 \text{ tons/yr}$$

C. Haul Trucks

$$4.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 5600 \text{ hr/yr} = 17920$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 3.42 \text{ lb/mile}$$

- where k = 0.8 (particle size multiplier)
- s = 4.8 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 10 miles/hr vehicle speed
- W = 25 tons average vehicle weight
- w = 14 wheels

$$\frac{3.42 \text{ lb/mi} \times 17920 \text{ mi/yr}}{2000 \text{ lb/ton}} = 30.60 \text{ tons/yr}$$

D. TOTAL PM:

94.76 tons/yr

* * aggregate handling * *

The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on a limited 5600 hours of use and AP-42, Ch 11.2.3.

$$E_f = k \cdot (0.0032) \cdot (U/5)^{1.3} / (M/2)^{1.4}$$

$$= 0.0022 \text{ lb/ton}$$

- where k = 0.74 (particle size multiplier)
- U = 10 mile/hr mean wind speed
- M = 4 % material moisture content

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1.3 tons/yr	AP-42 Ch.11.2.3
94.8 tons/yr	AP-42 Ch.11.2.1
0.2 tons/yr	AP-42 Ch.11.2.3
2240.0 tons/yr	Stack test
<u>5950.0 tons/yr</u>	Stack test
8286.2 tons/yr	

tons/yr
tons/yr
tons/yr
tons/yr
tons/yr
tons/yr

00012

: Limited PM Emission Calculations

tons/yr
tons/yr
tons/yr
tons/yr

tons/yr
tons/yr
tons/yr

00012

: Limited PM Emission Calculations

miles per year

miles per year

miles per year

Appendix A5: Limited PM-10 Emission Calculations

Company Name: Reed Minerals - a harsco company, Plant No. 11
 Plant Location: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
 County: Sullivan
 FESOP No.: F 153-7700-00012
 Date Reviewed: June 2, 1997
 Permit Reviewer: Marco A. Salenda

* * emissions before controls * *

Storage Piles		** see page 2 **				1.3
Transporting		** see page 3 **				42.6
Loading & Unloading	25 tons/hr x	5600 hrs/yr x	0.0010 lb/ton	/ 2000 lb/ton =		0.1
Fluid-Bed Dryer	25 tons/hr x	5600 hrs/yr x	2.69 lb/ton *	/ 2000 lb/ton =		188.3
Processing Equipment	25 tons/hr x	5600 hrs/yr x	9.23 lb/ton *	/ 2000 lb/ton =		646.1
<hr/>						
Total emissions before controls:						878.4

* * emissions after controls * *

Storage Piles	1.3 tons/yr x	10% emitted after controls =			0.1 tons/yr	
Transporting	42.6 tons/yr x	50% emitted after controls =			21.3 tons/yr	
Loading & Unloading	0.1 tons/yr x	50% emitted after controls =			0.0 tons/yr	
Fluid-Bed Dryer	188.3 tons/yr x	1% emitted after controls =			1.9 tons/yr	
Processing Equipment	646.1 tons/yr x	1% emitted after controls =			6.5 tons/yr	
<hr/>						
Total emissions after controls:						29.8 tons/yr

Since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, fugitive emissions are not counted toward determination of PSD and Title V applicability.

Drying and other process operations are considered nonfugitive. All other emissions are considered fugitive. Pursuant to PSD Rules, 326 IAC 2-2, emissions are as follows:

**** fugitive vs. nonfugitive ****

Storage Piles	1.3 tons/yr x	10% emitted after controls =	0.1 tons/yr
Transporting	42.6 tons/yr x	50% emitted after controls =	21.3 tons/yr
Loading / Unloading	0.1 tons/yr x	50% emitted after controls =	0.0 tons/yr
Total fugitive emissions:			21.5 tons/yr
Fluid-Bed Dryer	188.3 tons/yr x	1% emitted after controls =	1.9 tons/yr
Processing Equipment	646.1 tons/yr x	1% emitted after controls =	6.5 tons/yr
Total nonfugitive emissions:			8.3 tons/yr

**** storage ****

Storage emissions, which result from wind erosion, are determined by the following calculations:

A. Coal Slag

$$E_f = 1.7 \cdot (s/1.5)^3 \cdot (365-p)/235 \cdot (f/15)$$

$$= 0.34 \text{ lb/acre/day}$$

where s = 0.29 % silt content of material

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (233 \text{ day/yr})$$

$$= 0.29 \text{ tons/yr}$$

where sc = 200 ,000 tons storage capacity

B. Coal Slag Fines

$$E_f = 1.7 \cdot (s/1.5)^3 \cdot (365-p)/235 \cdot (f/15)$$

$$= 23.15 \text{ lb/acre/day}$$

where s = 20 % silt content of material

p = 125 days of rain greater than or equal to 0.01 inches

f = 15 % of wind greater than or equal to 12 mph

$$E_p (\text{storage}) = E_f \cdot sc \cdot (40 \text{ cuft/ton}) / (2000 \text{ lb/ton}) / (43560 \text{ sqft/acre}) / (25 \text{ ft}) \cdot (233 \text{ day/yr})$$

$$= 0.99 \text{ tons/yr}$$

where sc = 10 ,000 tons storage capacity

C. TOTAL PM: 1.28 tons/yr

* * unpaved roads * *

The following calculations determine the amount of emissions created by unpaved roads, based on a limited 5600 hours of use and AP-42, Ch 11.2.1.

A. Diesel Truck

$$5.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 5600 \text{ hr/yr} = 22400 \text{ miles per year}$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 1.86 \text{ lb/mile}$$

- where k = 0.36 (particle size multiplier)
- s = 4.8 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 10 miles/hr vehicle speed
- W = 28 tons average vehicle weight
- w = 18 wheels

$$\frac{1.86 \text{ lb/mi} \times 22400 \text{ mi/yr}}{2000 \text{ lb/ton}} = 20.86 \text{ tons/yr}$$

B. Front-End Loaders

$$10.0 \text{ trip/hr} \times 0.2 \text{ mile/trip} \times 2 \text{ (round trip) } \times 5600 \text{ hr/yr} = 22400 \text{ miles per year}$$

$$E_f = k \cdot 5.9 \cdot (s/12) \cdot (S/30) \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 0.71 \text{ lb/mile}$$

- where k = 0.36 (particle size multiplier)
- s = 4.8 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 10 miles/hr vehicle speed
- W = 21 tons average vehicle weight
- w = 4 wheels

$$\frac{0.71 \text{ lb/mi} \times 22400 \text{ mi/yr}}{2000 \text{ lb/ton}} = 8.01 \text{ tons/yr}$$

C. Haul Trucks

$$4.0 \text{ trip/hr} \times 0.4 \text{ mile/trip} \times 2 \text{ (round trip) } \times 5600 \text{ hr/yr} = 17920 \text{ miles per year}$$

$$E_f = k \cdot 5.9 \cdot (s/12)^2 \cdot (S/30)^2 \cdot (W/3)^{0.7} \cdot (w/4)^{0.5} \cdot ((365-p)/365)$$

$$= 1.54 \text{ lb/mile}$$

- where k = 0.36 (particle size multiplier)
- s = 4.8 % silt content of unpaved roads
- p = 125 days of rain greater than or equal to 0.01 inches
- S = 10 miles/hr vehicle speed
- W = 25 tons average vehicle weight
- w = 14 wheels

$$\frac{1.54 \text{ lb/mi} \times 17920 \text{ mi/yr}}{2000 \text{ lb/ton}} = 13.77 \text{ tons/yr}$$

D. TOTAL PM:

42.64 tons/yr

* * aggregate handling * *

The following calculations determine the amount of emissions created by truck loading and unloading of aggregate, based on a limited 5600 hours of use and AP-42, Ch 11.2.3.

$$E_f = k \cdot (0.0032)^2 \cdot (U/5)^{1.3} \cdot (M/2)^{1.4}$$

$$= 0.0010 \text{ lb/ton}$$

- where k = 0.35 (particle size multiplier)
- U = 10 mile/hr mean wind speed
- M = 4 % material moisture content

tons/yr AP-42 Ch.11.2.3
tons/yr AP-42 Ch.11.2.1
tons/yr AP-42 Ch.11.2.3
tons/yr Stack test
tons/yr Stack test
tons/yr

/year

/year

/year

Appendix A4: Emissions Summary

Company Name: Reed Minerals - a harsco company, Plant No. 11
 Plant Location: 8317 North U.S. Highway 41, Shelburn, Indiana 47879-0067
 County: Sullivan
 FESOP No.: F 153-7700-00012
 Date Reviewed: June 2, 1997
 Permit Reviewer: Marco A. Salenda

Pollutant	Potential Emissions		Allowable Emissions (tons/yr)
	Before Ctrl (tons/yr)	After Ctrl (tons/yr)	
PM	1323.3	31.1	249
PM-10	1314.4	22.3	99
SO2	11.3	11.3	18.6
NOx	5.3	5.3	5.3
VOC	0.2	0.2	0.2
CO	1.3	1.3	1.3