

STATE OF MISSOURI

PERMIT BOOK



DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 082011-005

Project Number: 2011-04-041  
Installation ID: 187-0006

Parent Company: Fred Weber, Inc.

Parent Company Address: 2320 Creve Coeur Mill Rd., Maryland Heights, MO 63043

Installation Name: Iron Mountain Trap Rock

Installation Address: 1325 Highway NN, Iron Mountain, MO 63650

Location Information: St. Francois County, S31, T35N, R4E

Application for Authority to Construct was made for:  
Reclassification of a portable rock crushing plant to stationary generic equipment at Iron Mountain Trap Rock. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

AUG 16 2011

EFFECTIVE DATE

DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available within 30 days of actual startup. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

**SITE SPECIFIC SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

*The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."*

1. **Superseding Condition**  
The conditions of this permit supersede all special conditions found in the previously issued construction permit 102006-007B from the Air Pollution Control Program.
2. **Generic Plant Designation and Maximum Combined Hourly Design Rate**  
Iron Mountain Trap Rock has been designated to be a Generic Plant Operation. The combined Maximum Hourly Design Rate (MHDR) each of the following generic equipment types shall not exceed the rates and numbers listed below.

Table 1: Generic Equipment

Equipment Type	Maximum Combined Hourly Design Rate	Maximum Number of Units
Primary Unit(s) (Primary Crusher)	400 tons per hour	1
Feeder/Grizzly	400 tons per hour	1
Crusher(s) including primary crusher	600 tons per hour	2
Conveyor(s), Stacker(s)	2,200 tons per hour	5
Screen(s)	600 tons per hour	1
Diesel Engine/Generator	500 horse power	1

3. **Generic Plant Equipment Identification Requirement**
  - A. Iron Mountain Trap Rock shall submit the following information to the Air Pollution Control Program's Permitting Section and the Southeast Regional Office within 15 days of actual startup.
    - 1) A master list of all equipment that will be permitted for use with the generic plant. This master list shall include at minimum the following information for each piece of equipment:
      - a) Manufacturer's name
      - b) Model number
      - c) Serial number
      - d) Actual MHDR
      - e) Date of manufacture
      - f) Any other additional information that is necessary to uniquely identify the equipment.
    - 2) A list of the core equipment that will always be utilized with the generic plant. The core equipment associated with the generic plant shall include at least one primary unit that controls the rate of the process flow (e.g., a primary crusher or primary screen).

Page No.	4
Permit No.	
Project No.	2011-04-041

**SITE SPECIFIC SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

---

- 3) A determination of the applicability of 40 CFR Part 60, Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" for each piece of equipment indicating whether each piece of equipment is subject to Subpart OOO and justification for this determination.
  - 4) Iron Mountain Trap Rock shall notify the Air Pollution Control Program's Permitting Section and the Southeast Regional Office when new equipment is added to the master list and when core equipment is changed within 30 days of the change.
    - B. Iron Mountain Trap Rock shall maintain a list of the specific equipment currently being utilized with the generic plant. Any arrangement of the generic plant's equipment must be such that the core equipment is not bypassed in the process flow.
4. Equipment Identification Requirement  
Iron Mountain Trap Rock shall maintain easily read permanent markings on each component of the plant. These markings shall be the equipment's serial number or a company assigned identification number that uniquely identifies the individual component.
5. Best Management Practices Requirement  
Iron Mountain Trap Rock shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing Best Management Practices as defined in Attachment AA.
6. Ambient Air Impact Limitation
  - A. Iron Mountain Trap Rock shall not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for particulate matter less than ten microns in aerodynamic diameter (PM<sub>10</sub>) of 150.0 µg/m<sup>3</sup> 24-hour average in ambient air.
  - B. Iron Mountain Trap Rock shall demonstrate compliance with special condition 6.A using Attachment A and Attachment B or other equivalent forms that have been approved by the Air Pollution Control Program, including electronic forms. Iron Mountain Trap Rock shall account for the impacts from other sources of PM<sub>10</sub> as instructed in the attachments.
  - C. Iron Mountain Trap Rock is exempt from the requirements of Special Condition 6.B when no other plants are located at the site and when only plants that are not owned by Fred Weber, Inc. are located at the site.
7. Annual Emission Limit
  - A. Iron Mountain Trap Rock shall emit less than 40.0 tons of NO<sub>x</sub> in any 12-month period from the entire installation.

Page No.	5
Permit No.	
Project No.	2011-04-041

**SITE SPECIFIC SPECIAL CONDITIONS:**

The permittee is authorized to construct and operate subject to the following special conditions:

---

- B. Iron Mountain Trap Rock shall demonstrate compliance with special condition 7.A using Attachment C or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
8. Wet Suppression Control System Requirement
- A. Iron Mountain Trap Rock shall install and operate wet spray devices on all crushers and screens.
  - B. Watering may be suspended during periods of freezing condition, when use of the wet spray devices may damage the equipment. During these conditions, Iron Mountain Trap Rock shall adjust the production rate to control emissions from these units. Iron Mountain Trap Rock shall record a brief description of such events.
9. Minimum Distance to Property Boundary Requirement
- The primary emission point shall be located at least 2,000 feet from the nearest property boundary.
10. Record Keeping Requirement
- Iron Mountain Trap Rock shall maintain all records required by this permit for not less than five years and make them available to any Missouri Department of Natural Resources personnel upon request.
11. Reporting Requirement
- Iron Mountain Trap Rock shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedances of the limitations imposed by this permit.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE  
SECTION (6) REVIEW

Project Number: 2011-04-041  
Installation ID Number: 187-0006  
Permit Number:

Iron Mountain Trap Rock  
1325 Highway NN  
Iron Mountain, MO 63650

Complete: April 20, 2011

Parent Company:  
Fred Weber, Inc.  
2320 Creve Coeur Mill Rd.  
Maryland Heights, MO 63043

St. Francois County, S31, T35N, R4E

### PROJECT DESCRIPTION

Iron Mountain Trap Rock is an existing rock-crushing plant located in St. Francois County, which is an attainment area for all pollutants. The installation is a minor source and holds a basic operating permit. Iron Mountain Trap Rock applied for a construction permit to reclassify a portable rock-crushing plant that was located at the site to generic stationary equipment. The generic equipment is listed in Table 1 in the special conditions. This equipment is additional equipment to what was permitted in previous construction permits. Equipment previously permitted does not count toward the generic equipment totals in Table 1. The new generic equipment will operate as a stand alone ballast plant and will not "tie in" with existing equipment. The primary crusher is rated at 400 tons per hour and the equipment may be powered with a 500 horse power diesel generator.

The installation is only required to keep daily production records for compliance with the NAAQS when other plants that are owned by Fred Weber, Inc. are located at the site. When records are required, Iron Mountain Trap Rock must calculate the impacts from the main plant and the ballast plant and include the impacts of other plants that are located at the site. The ambient impact factor for the main plant was taken from permit 072009-019.

The applicant is using one of the methods described in Attachment AA, "Best Management Practices," to control emissions from haul roads and vehicular activity areas.

This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

## TABLES

The following permits have been issued to Iron Mountain Trap Rock from the Air Pollution Control Program. This installation was originally permitted at this site as a portable plant under project PORT0323005 and applied for an intermediate operating permit in 1998 that was issued in 2002 and renewed in 2008. The amendments to permit 102006-007 allowed the installation to increase its production without exceeding its annual emission limit. Permit 082008-012 was for the ballast plant that is being reclassified as generic equipment in this permit.

**Table 2: Construction Permit History**

Permit Number	Description
0498-010	Portable to stationary
0299-003	Add equipment
072001-014	Add equipment
012006-008	Add equipment and BMPs
102006-007	Add equipment
102006-007A	Amend emission calculations
082008-012	New portable ballast plant
072009-019	Add conveyors
102006-007B	Amend emission calculations

The table below summarizes the emissions of this project. The existing actual emissions were taken from the previous years EIQ. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The conditioned potential emissions account for a limit of NO<sub>x</sub> to less than de minimis levels to avoid the modeling requirements of Section (6). The conditioned potential emissions include emissions from sources that will limit their production to ensure compliance with the annual emission limit and sources that operate continuously.

**Table 3: Emissions Summary (tons per year)**

Air Pollutant	De Minimis Level	<sup>a</sup> Existing Potential Emissions	Existing Actual Emissions (2010 EIQ)	<sup>b</sup> Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	N/D	N/D	69.17	39.42
PM <sub>10</sub>	15.0	39.0	12.86	25.31	14.43
PM <sub>2.5</sub>	10.0	N/D	N/D	11.97	6.82
SO <sub>x</sub>	40.0	N/A	N/A	4.62	2.63
NO <sub>x</sub>	40.0	N/A	N/A	70.19	< 40.0
VOC	40.0	N/A	N/A	5.73	3.27
CO	100.0	N/A	N/A	15.12	8.62
Total HAPs	25.0	N/A	N/A	0.06	0.04

N/A = Not Applicable; N/D = Not Determined

<sup>a</sup>Existing Potential Emissions are taken from permit #

<sup>b</sup>Includes site specific haul road and storage pile emissions

Table 4: Ambient Air Quality Impact Analysis

Pollutant	<sup>a</sup> NAAQS (µg/m <sup>3</sup> )	Averaging Time	<sup>b</sup> Maximum Modeled Impact (µg/m <sup>3</sup> )	Limited Impact (µg/m <sup>3</sup> )	Background (µg/m <sup>3</sup> )	<sup>c</sup> Daily Limit (tons/day)
<sup>d</sup> PM <sub>10</sub> (same)	150.0	24-hour	16.85	N/A	20.0	N/A
<sup>e</sup> PM <sub>10</sub> (separate)	150.0	24-hour	N/A	43.47	106.5	N/A

<sup>a</sup>National Ambient Air Quality Standards (NAAQS)

<sup>b</sup>Modeled impact at maximum capacity with controls

<sup>c</sup>Indirect limit based on compliance with NAAQS.

<sup>d</sup>Solitary operation or operation with other plants that are owned by Fred Weber, Inc.

<sup>e</sup>Operation with other plants that are not owned by Fred Weber, Inc.

## EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States Environmental Protection Agency (EPA) document AP-42 *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*, Fifth Edition (AP-42).

Emissions from the rock-crushing equipment were calculated using emission factors from AP-42 Section 11.19.2 "Crushed Stone Processing and Pulverized Mineral Processing," August 2004. The controlled emission factors were used because the equipment is control by water spray devices.

Emissions from the diesel generators were calculated using emission factors from AP-42 Section 3.3 Gasoline and Diesel Industrial Engines," October 1996.

Emissions from haul roads and vehicular activity areas were calculated using the predictive equation from AP-42 Section 13.2.2 "Unpaved Roads," November 2006. A 90% control efficiency is applied to the emission calculations for the use of BMPs. Emissions from load-in and load-out of storage piles were calculated using the predictive equation from AP-42 Section 13.2.4. The moisture content of the aggregate is 1.5% weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

## AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 4. The Air Pollution Control Program requires an AAQIA of PM<sub>10</sub> for all asphalt, concrete and rock-crushing plants regardless of the level of PM<sub>10</sub> emissions if a permit is required. An AAQIA is required for other pollutants if their emissions exceed their respective de minimis or screening model action level (SMAL).

The AAQIA was performed using the Air Pollution Control Program's generic nomographs and when appropriate the EPA modeling software SCREEN3. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the National Ambient Air Quality Standard (NAAQS) or Risk Assessment Level (RAL) for the pollutant. If during continuous operation the modeled concentration of a pollutant is greater than the applicable NAAQS or RAL, the plant's production is limited to ensure compliance with the standard. In cases where the plant is providing material for a highway project, the ambient impact is evaluated in accordance with a memorandum issued by the Air Pollution Control Program titled "Permitting Asphalt/Concrete Plants for Temporary Highway Projects," dated April 10, 2000. This memorandum states that air quality should be analyzed at the nearest residence or location where the public could reasonably be expected to be found instead of all ambient air. This practice generally allows for a less restrictive daily production level while protecting the public.

This plant uses BMPs to control emissions from haul roads and vehicular activity areas, so emissions from these sources were not included in the AAQIA. Instead they were addressed as a background concentration of  $20 \mu\text{g}/\text{m}^3$  of  $\text{PM}_{10}$  in accordance with the Air Pollution Control Program's BMPs interim policy.

#### OPERATING SCENARIOS

The plant is permitted to operate with other plants located at the site as long as the NAAQS is not exceeded. The following scenarios explain how Iron Mountain Trap Rock shall demonstrate compliance with the NAAQS.

- When no other plants are located at the site no record keeping is required.
- When plants that are owned by Fred Weber, Inc., which are referred to as same owner plants, are located at the site, Fred Weber, Inc. must calculate the daily impact of each plant and limit the total impact of all plants below the NAAQS using Attachment A.
- When only plants that are not owned by Fred Weber, Inc., which are referred to as separate owner plants, are located at the site, record keeping is not required. The total impact of the stationary equipment at this site is  $43.5 \mu\text{g}/\text{m}^3$ . Separate owner plants with separate owner backgrounds less than  $86.5 \mu\text{g}/\text{m}^3$  may be permitted to operate at this site.
- When both same owner plants and separate owner plants are located at the site, Fred Weber, Inc. must calculate the daily impact of each plant and limit the total impact of all plants below the NAAQS using Attachment B.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO<sub>x</sub> are conditioned below de minimis levels.

## APPLICABLE REQUIREMENTS

Iron Mountain Trap Rock shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- A Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

### SPECIFIC REQUIREMENTS

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment.
- 40 CFR 63 Subpart ZZZZ, "National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines" applies to the diesel engine.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

## STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

\_\_\_\_\_  
Michael Mittermeyer  
Environmental Engineer

\_\_\_\_\_  
Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated August 26, 2010, received April 20, 2011, designating Fred Weber, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.







## Attachment AA: Best Management Practices

Haul roads and vehicular activity areas shall be maintained in accordance with at least one of the following options when the portable plant is operating.

1. Pavement
  - A. The operator shall pave the area with materials such as asphalt, concrete or other materials approved by the Air Pollution Control Program. The pavement will be applied in accordance with industry standards to achieve control of fugitive emissions<sup>1</sup> while the plant is operating.
  - B. Maintenance and repair of the road surface will be conducted as necessary to ensure that the physical integrity of the pavement is adequate to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator shall periodically wash or otherwise clean all of the paved portions of the haul roads as necessary to achieve control of fugitive emissions from these areas while the plant is operating.
  
2. Application of Chemical Dust Suppressants
  - A. The operator shall apply a chemical dust suppressant (such as magnesium chloride, calcium chloride, lignosulfonates, etc.) to unpaved areas.
  - B. The quantities of the chemical dust suppressant shall be applied and maintained in accordance with the manufacture's recommendation (if available) and in sufficient quantities to achieve control of fugitive emissions from these areas while the plant is operating.
  - C. The operator shall record the time, date and the amount of material applied for each application of the chemical dust suppressant agent on the above areas. The operator shall keep these records with the plant for not less than five (5) years and make these records available to Department of Natural Resources personnel upon request.
  
3. Application of Water-Documented Daily
  - A. The operator shall apply water to unpaved areas. Water shall be applied at a rate of 100 gallons per day per 1,000 square feet of unpaved or untreated surface area while the plant is operating.
  - B. Precipitation may be substituted for watering if the precipitation is greater than one quarter of one inch and is sufficient to control fugitive emissions.
  - C. Watering may also be suspended when the ground is frozen, during periods of freezing conditions when watering would be inadvisable for traffic safety reasons, or when there will be no traffic on the roads.
  - D. The operator shall record the date, volume of water application and total surface area of active haul roads or the amount of precipitation that day. The operators shall also record the rationale for not watering (e.g. freezing conditions or not operating).
  - E. The operator shall keep these records with the plant for not less than five (5) years, and the operator shall make these records available to Department of Natural Resources personnel upon request

<sup>1</sup>For purposes of this document, Control of Fugitive Emissions means to control particulate matter that is not collected by a capture system and visible emissions to the extent necessary to prevent violations of the air pollution law or regulation. (Note: control of visible emission is not the only factor to consider in protection of ambient air quality.)

--Mr. Joe Elbl  
Environmental Manager  
Iron Mountain Trap Rock  
2320 Creve Coeur Mill Rd.  
Maryland Heights, MO 63043

RE: New Source Review Permit - Project Number: 2011-04-041

Dear Mr. Elbl:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Michael Mittermeyer, at the Department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale  
New Source Review Unit Chief

KBH:mml

Enclosures

c: Southeast Regional Office  
PAMS File: 2011-04-041

Permit Number: