

FILE COPY

STATE OF MISSOURI



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: **06 2 0 1 2 - 0 0 3**

Project Number: 2012-02-055
Installation ID: 099-0113

Parent Company: Simpson Construction Materials, LLC

Parent Company Address: P.O. Box 250, Valley Park, MO 63088

Installation Name: Simpson Construction Material, LLC - Barnhart Quarry

Installation Address: 850 Sulphur Springs Road, Sulphur Springs, MO 63052

Location Information: Jefferson County, S32, T42N, R6E

Application for Authority to Construct was made for a generic crushing plant. 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.

JUN 08 2012

EFFECTIVE DATE

A handwritten signature in cursive script, appearing to read "Kenneth L. Moore".

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 Department's Air Pollution Control Program of the anticipated date of startup 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 startup 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.

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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. Generic Plant Designation and Maximum Combined Hourly Design Rate
Simpson Construction Material, LLC - Barnhart Quarry has been designated to be a Generic Plant Operation. The combined Maximum Hourly Design Rate (MHDR) of each of the following generic equipment types shall not exceed the rates and numbers listed in Table 1.

Table 1: Generic Equipment

Equipment Type	Maximum Combined Hourly Design Rate	Maximum Number of Units
Primary Unit(s) (Primary Crusher)	500 tons per hour	1
Feeder/Grizzly	500 tons per hour	1
Crusher(s) including primary crusher	2,000 tons per hour	4
Conveyor(s), Stack(s), Bin(s)	15,000 tons per hour	20
Screen(s)	3,000 tons per hour	6

2. Generic Plant Equipment Identification Requirement
 - A. Simpson Construction Material, LLC - Barnhart Quarry shall submit the following information to the Air Pollution Control Program's Permitting Section and the St. Louis 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).
 - 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.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

- 4) Simpson Construction Material, LLC - Barnhart Quarry shall notify the Air Pollution Control Program's Permitting Section and the St. Louis Regional Office when new equipment is added to the master list and when core equipment is changed within 30 days of the change.
 - B. Simpson Construction Material, LLC - Barnhart Quarry 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.
3. Equipment Identification Requirement
Simpson Construction Material, LLC - Barnhart Quarry 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.
4. Best Management Practices Requirement
Simpson Construction Material, LLC - Barnhart Quarry 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.
5. Annual Emission Limit
 - A. Simpson Construction Material, LLC - Barnhart Quarry shall emit less than 15.0 tons of particulate matter less than ten microns in diameter (PM₁₀) in any 12-month period from the entire installation.
 - B. Simpson Construction Material, LLC - Barnhart Quarry shall demonstrate compliance with Special Condition 5.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
6. Moisture Content Testing Requirement
 - A. Simpson Construction Material, LLC - Barnhart Quarry shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent weight.
 - B. Testing shall be conducted according to the method prescribed by the American Society for Testing Materials (ASTM) D-2216, C-566 or another method approved by the Director.
 - C. The initial test shall be conducted no later than 45 days after the start of operation. A second test shall be performed the calendar year following the initial test during the months of July or August.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

- D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).
- E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Simpson Construction Material, LLC - Barnhart Quarry main office within 30 days of completion of the required test.
- F. If the moisture content of either of the two tests is less than the moisture content in Special Condition 6.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Simpson Construction Material, LLC - Barnhart Quarry shall either:
 - 1) Apply for a new permit to account for the revised information, or
 - 2) Submit a plan for the installation of wet spray devices to the Air Pollution Control Program Compliance Assistance section within ten days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
- 7. **Minimum Distance to Property Boundary Requirement**
The primary emission point (EP5A) shall be located at least 1150 feet from the nearest property boundary.
- 8. **Concurrent Operation Restriction**
Simpson Construction Material, LLC - Barnhart Quarry is prohibited from operating whenever other plants are located at the site.
- 9. **Primary Equipment Requirement**
Simpson Construction Material, LLC - Barnhart Quarry shall process all rock through the primary crusher (EU5A). Bypassing the primary crusher is prohibited.
- 10. **Record Keeping Requirement**
Simpson Construction Material, LLC - Barnhart Quarry 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**
Simpson Construction Material, LLC - Barnhart Quarry 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: 2012-02-055
Installation ID Number: 099-0113
Permit Number:

Simpson Construction Material, LLC - Barnhart Quarry
850 Sulphur Springs Road
Sulphur Springs, MO 63052

Complete: February 17, 2012

Parent Company:
Simpson Construction Materials, LLC
P.O. Box 250
Valley Park, MO 63088

Jefferson County, S32, T42N, R6E

PROJECT DESCRIPTION

Simpson Construction Material, LLC is applying for a generic crushing plant at Simpson Construction Materials, LLC's Barnhart Quarry (Jefferson County). This site will have a maximum production rate of 500 tons per hour and will have up to four crushers (2,000 tons per hour combined total crushing) each having an attached underconveyor, one vibrating grizzly feeder (500 tons per hour), six screens (3,000 tons per hour combined total screening) each having any attached underconveyor and two attached cross conveyor, 20 additional conveyors/stackers/bins (15,000 tons per hour combined conveying, including the conveyors attached to the crushers and screens), and a 17,600 gallon diesel tank. The plant will use electric power so there will be no stationary diesel engines at the site. Simpson Construction Material, LLC desires a production level of at least 5,000 tons per day.

Only as minimally required to meet NAAQS and continue to maintain the daily production level noted above, Simpson Construction Materials, LLC will conduct moisture content testing of the aggregate to verify that the moisture content is at least 1.5% by weight.

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 located in Jefferson County, a nonattainment area for the eight-hour ozone standard and the particulate matter less than 2.5 microns in diameter (PM_{2.5}) standard and an attainment area for all other criteria pollutants. Part of Jefferson County is a nonattainment area for lead. The installation is not located in the Jefferson County lead nonattainment area because it is not located within the city limits of Herculaneum.

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.

No permits have been issued to Simpson Construction Material, LLC - Barnhart Quarry from the Air Pollution Control Program.

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are site specific should not vary from site to site. The existing actual emissions are not available since this is a new facility. 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 include emissions from sources that will limit their production to ensure compliance with the annual PM₁₀ emission limit.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions of Process Equipment	Existing Actual Emissions (2011 EIQ)	^a Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	55.87	N/A	206.08	43.22
PM ₁₀	15.0	22.14	N/A	71.52	<15.00
PM _{2.5}	10.0	2.83	N/A	26.30	5.52
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	1.05	N/A	1.05	0.22
CO	100.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

N/A = Not Applicable

^aIncludes site specific haul road and storage pile emissions

Table 3: Ambient Air Quality Impact Analysis

Pollutant	^a NAAQS/RAL (µg/m ³)	Averaging Time	^b Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	Daily Production (tons/day)
PM ₁₀	150.0	24-hour	103.98	N/A	20.0	12,000

^aNational Ambient Air Quality Standards (NAAQS)

^bModeled impact at maximum capacity with controls

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 inherent moisture content of the crushed rock is at least 1.5 percent (%) by weight

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 Best Management Practices (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% by 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 3. The Air Pollution Control Program requires an AAQIA of PM₁₀ for all asphalt, concrete and rock-crushing plants regardless of the level of PM₁₀ 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 AERSCREEN. 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 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

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 PM₁₀ are conditioned below de minimis levels. Potential emissions of PM are above de minimis level but below major source levels, however no modeling is required.

APPLICABLE REQUIREMENTS

Simpson Construction Material, LLC - Barnhart Quarry 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.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- *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 60 Subpart Kb, "Standards of Performance for Volatile Organic Liquids Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984" does not apply to the equipment. This subpart applies to storage vessels with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids. The tank in this permit has a 17,600 gallon capacity which converts to 66.6 m³. It is less than 75 m³, so this subpart does not apply.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed equipment.

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.

Kathy Kolb
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated February 13, 2012, received February 16, 2012, designating Simpson Construction Materials, LLC 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 emissions¹ 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

¹For 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. Tom Simpson
General Manager
Simpson Construction Material, LLC - Barnhart Quarry
P.O. Box 250
Valley Park, MO 63088

RE: New Source Review Permit - Project Number: 2012-02-055

Dear Mr. Simpson:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions 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 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 Kathy Kolb, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102, or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kkk

Enclosures

c: St. Louis Regional Office
PAMS File: 2012-02-055

Permit Number: