

PERMIT BOOK

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: 082009-002

Project Number: 2009-06-017

Parent Company: Ray County Stone Producers, LLC

Parent Company Address: 17279 Maddux Rd., Rayville, MO 64084

Installation Name: Ray County Stone Producers, LLC

Installation ID: 177-0041

Installation Address: 17279 Maddux Rd., Rayville, MO 64084

Location Information: Ray County, S14/15, T53N, R28W

Application for Authority to Construct was made for:
Installation of a new crusher, screen and four conveyors. This review was conducted in accordance with Section (5), 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 - 4 2009

EFFECTIVE DATE

Handwritten signature of James L. Kavanagh in black ink.

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.

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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. Superseding Condition
 - A. The conditions of this permit supersede special condition 2 found in the previously issued construction permit 022009-001 from the Air Pollution Control Program.

2. Ambient Air Impact Limitation
 - A. Ray County Stone Producers, LLC shall not cause an exceedance of the National Ambient Air Quality Standard (NAAQS) for particulate matter less than ten microns in aerodynamic diameter (PM₁₀) of 150.0 µg/m³ 24-hour average in ambient air.

 - B. Ray County Stone Producers, LLC shall demonstrate compliance with special condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form. Ray County Stone Producers, LLC shall account for the impacts from other sources of PM₁₀ as instructed in Attachment A.

3. Record Keeping Requirement

Ray County Stone Producers, LLC shall maintain all records required by this permit for five years and make them available to any Missouri Department of Natural Resources personnel upon request.

4. Reporting Requirement

Ray County Stone Producers, LLC 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 (5) REVIEW

Project Number: 2009-06-017
Installation ID Number: 177-0041
Permit Number:

Ray County Stone Producers, LLC
17279 Maddux Rd.
Rayville, MO 64084

Complete: June 10, 2009

Parent Company:
Ray County Stone Producers, LLC
17279 Maddux Rd.
Rayville, MO 64084

Ray County, S14/15, T53N, R28W

PROJECT DESCRIPTION

Ray County Stone Producers, LLC is an existing stationary rock-crushing plant. The plant was originally permitted as a portable plant at this site (092008-003, PORT-0623). On February 2, 2009 a permit was issued authorizing the plant to remain at the site (022009-001). That permit contains a de minimis limit for PM₁₀ that applies to all the equipment at the installation at the time the permit was issued. The equipment authorized by the current permit is not included in the previous PM₁₀ limit, which is still in effect. Ray County Stone Producers, LLC currently does not have a basic operating permit.

Ray County Stone Producers, LLC has applied for authority to install one Terex-Cedarapids 1100 crusher with an onboard conveyor and one CEC 616 screen with three onboard conveyors. This equipment will process rock before it enters the existing primary crusher (EP1). The new equipment has a maximum hourly design rate of 450 tons per hour.

No other plants are currently located at the site, however Ray County Stone Producers, LLC is permitted for concurrent operations.

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 Ray County, a maintenance area for ozone and an attainment area for all other criteria pollutants.

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 Ray County Stone Producers, LLC from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
022008-003	New portable rock-crushing plant PORT-0623
022009-001	Portable to stationary

The project description in permit 022009-001 lists a diesel engine as a power source for some of the equipment, however the permits emissions table does not include emissions of SO_x, NO_x, VOC, CO or HAPs as expected from a combustion source. These emissions were recalculated as a part of the current analysis and included in Table 2.

The table below summarizes the emissions of this project. The existing potential emissions of PM₁₀ were taken from permit 022009-001. The existing potential emissions of the other pollutants were calculated using emission factors as described in the Emissions Calculations section. The existing actual emissions are not applicable because the installation has not operated at the site for a full year. The potential emissions of the application represent the emissions of the new equipment, which is bottlenecked by the existing equipment, and are based on the existing PM₁₀ limit.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level	¹ Existing Potential Emissions	Existing Actual Emissions	² Potential Emissions of the Application	New Installation Potential Emissions
PM ₁₀	15.0	< 15.0	N/A	2.91	17.91
SO _x	40.0	0.11	N/A	N/A	0.11
NO _x	40.0	1.68	N/A	N/A	1.68
VOC	40.0	0.14	N/A	N/A	0.14
CO	100.0	0.36	N/A	N/A	0.36
Total HAPs	25.0	0.01	N/A	N/A	0.01

N/A = Not Applicable;

¹Existing Potential Emissions taken from permit 022009-001

²Includes site specific haul road and storage pile emissions

Table 3: Ambient Air Quality Impact Analysis

Pollutant	¹ NAAQS/ RAL (µg/m ³)	Averaging Time	² Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	³ Daily Limit (tons/day)
⁴ PM ₁₀ (same)	150.0	24-hour	788.7	130.0	20.0	3,221
⁵ PM ₁₀ (separate)	150.0	24-hour	N/A	97.2	52.8	2,408

¹National Ambient Air Quality Standards (NAAQS) and Risk Assessment Level (RAL)

²Modeled impact at maximum capacity with controls

³Indirect limit based on compliance with NAAQS.

⁴Solitary operation or operation with other plants that are owned by Ray County Stone Producers, LLC

⁵Operation with other plants that are not owned by Ray County Stone Producers, LLC

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 uncontrolled emission factors were used because the inherent moisture content of the crushed rock is less than 1.5% weight. Emissions from the diesel engines 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 "Aggregate Handling and Storage Piles," November 2006. The moisture content of the aggregate is 0.7% 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 PM₁₀. 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. The AAQIA was performed using the Air Pollution Control Programs generic nomographs. 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. The distance from the plant to the nearest site boundary is 800 feet. When the plant operates continuously, the modeled concentration of PM₁₀ is greater than the NAAQS, so the plant's production was limited to insure compliance with the NAAQS.

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 Programs 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 Ray County Stone Producers, LLC shall demonstrate compliance with the NAAQS.

- When plants that are owned by Ray County Stone Producers, LLC are located at the site, Ray County Stone Producers, LLC must calculate the daily impact of each plant and limit the total impact of all plants below the NAAQS.
- When plant are not owned by Ray County Stone Producers, LLC are located at the site, Ray County Stone Producers, LLC must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Ray County Stone Producers, LLC that are operating at the site. This total is limited below the NAAQS. Ray County Stone Producers, LLC will limit the total impact of all plants they own and operate at the site to 97.23 $\mu\text{g}/\text{m}^3$ when any plants they do not own are located at the site. Ray County Stone Producers, LLC is not permitted to operate with any plant that is not owned by Ray County Stone Producers, LLC that has a separate owner background greater than 32.77 $\mu\text{g}/\text{m}^3$.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are below de minimis levels.

APPLICABLE REQUIREMENTS

Ray County Stone Producers, LLC 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. The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- 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 10-3.090

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment. 40 CFR 60 Subpart IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to the equipment.
- 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.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260
- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-3.060

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), 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 June 2, 2009, received June 10, 2009, designating Ray County Stone Producers, 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 manufacturer'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 and volume of water application 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.)

Attachment BB: Emission Calculations
Ray County Stone Producers, LLC
2009-06-017

Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	Control Eff. %	Emissions (lb/hr)	³ Modeling Rate (lb/hr)
KPI FT4240 Primary Crusher	450.0000	tons	0.002400	tons	0.00	1.0800	0.3221
On-board Crusher Discharge Conveyor	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
Chieftain 1400 Power Screen	450.0000	tons	0.008700	tons	0.00	3.9150	1.1675
3 Discharge Conveyors on screen in parallel	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
Feed conveyor on screen	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
3 Surge Bins	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
Load In Storage Pile #1	450.0000	tons	0.011991	tons	0.00	5.3960	1.6092
Wind Erosion Storage Pile #1	2.0000	tons	0.089166	acres-hr	0.00	0.1783	0.0532
Vehicular Activity Storage Pile #1	450.0000	tons	0.009460	tons	90.00	0.4257	0.1269
Load Out Storage Pile #1	450.0000	tons	0.011991	tons	0.00	5.3960	1.6092
Haul Road #1	4.6165	VMT	1.696978	VMT	90.00	0.7834	0.2336
Haul Road #2	9.7761	VMT	2.230934	VMT	90.00	2.1810	0.6504
Pioneer 3-deck screen	450.0000	tons	0.008700	tons	0.00	3.9150	1.1675
4 Discharge Conveyors on screen in parallel	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
Eagle screen	450.0000	tons	0.008700	tons	0.00	3.9150	1.1675
4 Discharge Conveyors on screen in parallel	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
Diesel Engine	0.0056	tons	42.470000	Mgal	0.00	0.2380	0.0710
Terex-Cedarapids 1100 Crusher	450.0000	tons	0.002400	tons	0.00	1.0800	0.3221
On-board crusher discharge conveyor	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476
CEC 616 Screen	450.0000	tons	0.008700	tons	0.00	3.9150	1.1675
3 Discharge Conveyors on screen in parallel	450.0000	tons	0.001100	tons	0.00	0.4950	0.1476

¹Maximum Hourly Design Rate (MHDR)

²Emission Factor (EF)

³The Modeling Rate is the emission rate scaled to the daily hours of operation at MHDR allow by the permit.

Mr. Jeremy Greer
President
Ray County Stone Producers, LLC
17279 Maddux Rd.
Rayville, MO 64084

RE: New Source Review Permit - Project Number: 2009-06-017

Dear Mr. Greer:

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 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: Kansas City Regional Office
PAMS File: 2009-06-017
Permit Number: