

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: **042010-006** Project Number: 2010-01-029

Parent Company: Higgins-Meeker Quarry

Parent Company Address: 487 SW 700 Road, Deepwater, MO 64740

Installation Name: Higgins-Meeker Quarry

Installation ID: 083-P044

Installation Address: 951 SW 51 Road, Deepwater, MO 64740

Location Information: Henry County, S26, T40N, R26W

Application for Authority to Construct was made for:

The debottlenecking of the existing rock-crushing plant and the addition of a secondary rock-crushing plant. 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.

APR 12 2010

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "James L. Kwon".

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**
The conditions of this permit supersede all special conditions found in the previously issued construction permits 062001-008 and 042002-006 from the Air Pollution Control Program.
2. **Best Management Practices Requirement**
Higgins-Meeker 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.
3. **Ambient Air Impact Limitation**
 - A. Higgins-Meeker Quarry 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. Higgins-Meeker Quarry shall demonstrate compliance with special condition 3.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
4. **Annual Emission Limit**
 - A. Higgins-Meeker Quarry shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation.
 - B. Higgins-Meeker Quarry shall demonstrate compliance with special condition 4.A using Attachment B or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
5. **Minimum Distance to Property Boundary Requirement**
The primary crusher of the existing rock crushing plant (EP-04) shall be located at least 800 feet from the nearest property boundary. The primary crusher of the new rock crushing plant (EP-29) shall be located at least 500 feet from the nearest property boundary.
6. **Diesel Engine/Generator Operational Restrictions**
The diesel engines/generators shall only be used to power equipment during production.
7. **Concurrent Operation Restriction**

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SITE SPECIFIC SPECIAL CONDITIONS:

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

Higgins-Meeker Quarry is prohibited from operating whenever other plants are located at the site.

8. Record Keeping Requirement

Higgins-Meeker 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.

9. Reporting Requirement

Higgins-Meeker 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 (5) REVIEW

Project Number: 2010-01-029
Installation ID Number: 083-P044
Permit Number:

Higgins-Meeker Quarry
951 SW 51 Road
Deepwater, MO 64740

Complete: January 14, 2010

Parent Company:
Higgins-Meeker Quarry
487 SW 700 Road
Deepwater, MO 64740

Henry County, S26, T40N, R26W

PROJECT DESCRIPTION

Higgins-Meeker Quarry owns and operates an existing rock-crushing installation. The facility proposes to modify its primary crusher (i.e. adjusting its closed side settings) to increase the maximum hourly design rate (MHDR) from 150 tons per hour to 200 tons per hour and to install a new secondary crushing plant. The secondary crushing plant has a maximum hourly design rate of 200 tons per hour and consists of one (1) feeder, one (1) crusher, one (1) screen, six (6) conveyors and a diesel engine. The diesel engine has a maximum fuel usage of 17.9 gallons per hour. The secondary crushing plant will be used in two operating scenarios. In the first scenario, the secondary plant will be set up close to the existing rock crushing plant and provide aggregates to the existing plant. In the second scenario, the secondary plant will be moved within the quarry to crush and size rock independently of the primary plant. The primary crusher of the new secondary plant (EP-29) will be set up at least 500 feet from the nearest property boundary regardless of the operating scenario. The primary crusher of the existing plant is set up at least 800 feet from the nearest property boundary.

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 Henry County, an attainment area for all 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 Higgins-Meeker Quarry from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
062001-008	Installation of a new rock crushing plant.
042002-006	Replacing and installing equipment to the existing rock crushing plant.

The table below summarizes the emissions of this project. The potential emissions of process equipment exclude emissions from haul roads and wind erosion, which are site specific and can vary from site to site. The existing actual emissions were not determined. The potential emissions of the application represent the emissions of all equipment and activities assuming continuous operation (8760 hours per year). The PM₁₀ conditioned potential emissions are based on a voluntary limit of 15.0 tons per year to avoid increment modeling. The conditioned potential emissions of other pollutants are proportionally reduced.

Table 2: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/ SMAL	¹ Existing Potential Emissions (tons)	Existing Actual Emissions (tons)	² Potential Emissions of the Application (tons)	³ Conditioned Potential Emissions (tons)
PM ₁₀	15.0	15.99	N/D	119.17	<15.0
SO _x	40.0	1.39	N/D	6.49	0.76
NO _x	40.0	21.06	N/D	98.71	11.62
VOC	40.0	1.72	N/D	8.06	0.95
CO	100.0	4.54	N/D	21.26	2.50
Total HAPs	25.0	N/D	N/D	0.09	0.01

N/D = Not Determined

¹Existing potential emissions taken from permit 042002-006

²Includes site specific haul road and storage pile emissions

³Conditioned potential emissions of SO_x, NO_x, VOC, CO and HAPs are proportionally reduced based on limiting PM₁₀ emissions from the new rock crushing plant to 15.0 tons per year.

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	150.0	24-hour	517.76	130.00	20.0	N/D

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

²Modeled impact at maximum capacity with controls

³The daily production limit is listed as not determined (N/D) because the facility can balance production between the two (2) plants at the site to ensure compliance with NAAQS.

⁴Solitary operation only.

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% by weight.

Emissions from the diesel engines/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 0.7% 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 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 Program's generic nomographs and different distances for each plant. The primary (existing) plant was evaluated at 800 feet to the nearest property boundary. The secondary (new) plant was evaluated at 500 feet to the nearest property boundary. When the two plant operate continuously, the modeled concentration of PM₁₀ is greater than the National Ambient Air Quality Standards (NAAQS). The two plants are permitted to balance their production so that their combined daily PM₁₀ ambient impact does not exceed 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 20.0 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 (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis levels.

APPLICABLE REQUIREMENTS

Higgins-Meeker 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. 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. 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

- 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," does not apply to the diesel engine because the engine was manufactured before April 1, 2006.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) apply to the proposed equipment.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260

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.

Chia-Wei Young
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated January 8, 2010 received January 14, 2010, designating Higgins-Meeker Quarry as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Kansas City Regional Office Site Survey, dated January 28, 2010.

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, 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.)

Attachment BB: Emission Calculations
Higgins-Meeker Quarry
2010-01-029

Existing Plant

Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	Control Eff. %	Emissions (lb/hr)	³ Modeling Rate (lb/hr)
Drilling	200.0000	Tons	0.000000	Tons	0.00	0.0000	0.0000
Blasting	200.0000	Tons/Day	0.000000	Tons/Day	0.00	0.0000	0.0000
Pit Hauling	4.3290	VMT	1.936221	VMT	90.00	0.8382	0.5025
Feeder	200.0000	Tons	0.000016	Tons	0.00	0.0032	0.0019
Primary Crusher	200.0000	Tons	0.002400	Tons	0.00	0.4800	0.2878
Crusher Diesel Engine	0.0066	Mgal	42.470000	Mgal	0.00	0.2803	0.1681
Conveyor	200.0000	Tons	0.001100	Tons	0.00	0.2200	0.1319
Conveyor	200.0000	Tons	0.001100	Tons	0.00	0.2200	0.1319
2-Deck Screen	200.0000	Tons	0.008700	Tons	0.00	1.7400	1.0432
Storage Pile Wind Erosion	5.0000	Acres	0.089166	Acres	0.00	0.0825	0.0495
Storage Pile Vehicular Activity	200.0000	Tons	0.006195	Tons	90.00	0.0825	0.0495
Storage Pile Load Out	200.0000	Tons	0.011991	Tons	0.00	2.3982	1.4378
Product Hauling	8.4175	VMT	2.129451	VMT	90.00	0.4458	0.2673
Generator Engine	0.0080	Mgal	42.470000	Mgal	0.00	0.1239	0.0743
Conveyor	225.0000	Tons	0.001100	Tons	0.00	2.3982	1.4378
2-Deck Screen	225.0000	Tons	0.008700	Tons	0.00	1.7925	1.0747
Screen Engine	0.0048	Mgal	42.470000	Mgal	0.00	0.3398	0.2037
Conveyor	100.0000	Tons	0.001100	Tons	0.00	0.2475	0.1484
Conveyor	100.0000	Tons	0.001100	Tons	0.00	1.9575	1.1736
Conveyor	75.0000	Tons	0.001100	Tons	0.00	0.2039	0.1222
Conveyor	225.0000	Tons	0.001100	Tons	0.00	0.1100	0.0659
Feeder w/ Conveyor	200.0000	Tons	0.001100	Tons	0.00	0.1100	0.0659

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.

Attachment BB: Emission Calculations
Higgins-Meeker Quarry
2010-01-029

New Plant

Description	¹ MHDR	MHDR Units	² PM ₁₀ EF	EF Units	Control Eff. %	Emissions (lb/hr)	³ Modeling Rate (lb/hr)
Feeder	200.0000	Tons	0.000016	Tons	0.00	0.0032	0.0032
Conveyor	75.0000	Tons	0.001100	Tons	0.00	0.0825	0.0825
Secondary Crusher	200.0000	Tons	0.002400	Tons	0.00	0.4800	0.4800
Crusher Engine	0.0179	Mgal	42.470000	Mgal	0.00	0.7602	0.7602
Conveyor	200.0000	Tons	0.001100	Tons	0.00	0.2200	0.2200
2-Deck Screen	200.0000	Tons	0.008700	Tons	0.00	1.7400	1.7400
Underscreen Conveyor	200.0000	Tons	0.001100	Tons	0.00	0.2200	0.2200
Conveyor	100.0000	Tons	0.001100	Tons	0.00	0.1100	0.1100
Conveyor	100.0000	Tons	0.001100	Tons	0.00	0.1100	0.1100
Conveyor	100.0000	Tons	0.001100	Tons	0.00	0.1100	0.1100
Hauling to Storage Pile	7.5758	VMT	1.936221	VMT	90.00	1.4668	1.4668
Product Hauling	8.4175	VMT	2.129451	VMT	90.00	1.7925	1.7925
Storage Pile Load In	200.0000	Tons	0.011991	Tons	0.00	2.3982	2.3982
Storage Pile Load Out	200.0000	Tons	0.011991	Tons	0.00	2.3982	2.3982
Storage Pile Wind Erosion	5.0000	Acres	0.012390	Acres	0.00	0.2478	0.2478
Storage Pile Vehicular Activity	200.0000	Tons	0.089166	Tons	90.99	0.4458	0.4458

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. Mat Meeker
Owner
Higgins-Meeker Quarry
487 SW 700 Road
Deepwater, MO 64740

RE: New Source Review Permit - Project Number: 2010-01-029

Dear Mr. Meeker:

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 Chia-Wei Young, 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:cwyl

Enclosures

c: Kansas City Regional Office
PAMS File: 2010-01-029

Permit Number: