

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: 102013-017 Project Number: 2013-05-008 Installation ID: PORT-0594

Parent Company: Mansfield Lime & Stone Quarry, Inc.

Parent Company Address: 1726 Quarry Road, Mansfield, MO 65704

Installation Name: Mansfield Lime & Stone Quarry, Inc. PORT-0594

Installation Address: 3363 East State Highway 76, Kirbyville, MO 65679

Location Information: Taney County, S1 T22N R21W

Application for Authority to Construct was made for: Construction of a new portable rock 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.

OCT 30 2013

EFFECTIVE DATE

Signature of Kyrna 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 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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Project No.	2013-05-008

GENERAL 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. **Equipment Identification Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 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. These identification numbers must be submitted to the Air Pollution Control Program no later than 15 days after start-up of the portable rock crushing plant.
2. **Relocation of Portable Rock Crushing Plant**
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall not be operated at any location longer than 24 consecutive months.
 - B. A complete "Portable Source Relocation Request" application must be submitted to the Air Pollution Control Program prior to any relocation of this portable rock crushing plant.
 - 1) If the portable rock crushing plant is moving to a site previously permitted, and if the circumstances at the site have not changed, then the application must be received by the Air Pollution Control Program at least seven days prior to the relocation.
 - 2) If the portable rock crushing plant is moving to a new site, or if circumstances at the site have changed (e.g. the site was only permitted for solitary operation and now another plant is located at the site), then the application must be received by the Air Pollution Control Program at least 21 days prior to the relocation. The application must include written notification of any concurrently operating plants.
3. **Record Keeping Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall maintain all records required by this permit for not less than five years and shall make them available to any Missouri Department of Natural Resources' personnel upon request.
4. **Reporting Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after any exceedances of the limitations imposed by this permit.

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Project No.	2013-05-008

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."

PORT ID Number: PORT-0594

Site ID Number: 231-0022

Site Name: 76 Quarry

Site Address: 3363 East State Highway 76, Kirbyville, MO 65679

Site County: Taney S1 T22N R21W

1. **Best Management Practices Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
2. **Ambient Air Impact Limitation**
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall demonstrate compliance with Special Condition 2.A using Attachment A and Attachment B or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
3. **Moisture Content Testing Requirement**
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by 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.
 - 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).

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Project No.	2013-05-008

SITE SPECIFIC SPECIAL CONDITIONS:

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

- 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 Mansfield Lime & Stone Quarry, Inc. PORT-0594 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 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Mansfield Lime & Stone Quarry, Inc. PORT-0594 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 Compliance/Enforcement Section of the Air Pollution Control Program within 10 days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
 - G. In lieu of testing, Mansfield Lime & Stone Quarry, Inc. PORT-0594 may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.
- 4. **Minimum Distance to Property Boundary Requirement**
The primary emission point (EP5) shall be located at least 450 feet from the nearest property boundary.
 - 5. **Record Keeping Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 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.
 - 6. **Reporting Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after any exceedances of the limitations imposed by this permit.

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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."

PORT ID Number: PORT-0594

Site ID Number: 215-0066

Site Name: Mountain Grove Quarry

Site Address: 2504 Limestone Drive

Site County: Texas, S2 T28N R12W

1. Best Management Practices Requirement
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
2. Ambient Air Impact Limitation
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall demonstrate compliance with Special Condition 2.A using Attachment E and Attachment F or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
3. Moisture Content Testing Requirement
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by 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.
 - 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).

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SITE SPECIFIC SPECIAL CONDITIONS:

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

- 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 Mansfield Lime & Stone Quarry, Inc. PORT-0594 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 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceeded the limit, Mansfield Lime & Stone Quarry, Inc. PORT-0594 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 Compliance/Enforcement Section of the Air Pollution Control Program within 10 days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.

 - G. In lieu of testing, Mansfield Lime & Stone Quarry, Inc. PORT-0594 may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.
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- 4. **Minimum Distance to Property Boundary Requirement**
The primary emission point (EP5) shall be located at least 400 feet from the nearest property boundary.

 - 5. **Record Keeping Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 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.

 - 6. **Reporting Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after any exceedances of the limitations imposed by this permit.

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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."

PORT ID Number: PORT-0594

Site ID Number: 229-0028

Site Name: Mansfield Quarry

Site Address: 1726 Quarry Road, Mansfield, MO 65704

Site County: Wright, S14 T28N R15W

1. **Best Management Practices Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall control fugitive emissions from all of the haul roads and vehicular activity areas at this site by performing BMPs as defined in Attachment AA.
2. **Ambient Air Impact Limitation**
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall demonstrate compliance with Special Condition 2.A using Attachment C and Attachment D or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
3. **Moisture Content Testing Requirement**
 - A. Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall verify that the moisture content of the processed rock is greater than or equal to 1.5 percent by 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.
 - 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).

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Project No.	2013-05-008

SITE SPECIFIC SPECIAL CONDITIONS:

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

- 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 Mansfield Lime & Stone Quarry, Inc. PORT-0594 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 3.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Mansfield Lime & Stone Quarry, Inc. PORT-0594 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 Compliance/Enforcement Section of the Air Pollution Control Program within 10 days of the second noncompliant test. The wet spray devices shall be installed and operational within 40 days of the second noncompliant test.
 - G. In lieu of testing, Mansfield Lime & Stone Quarry, Inc. PORT-0594 may obtain test results that demonstrate compliance with the moisture content in Special Condition 3.A from the supplier of the aggregate.
- 4. **Minimum Distance to Property Boundary Requirement**
The primary emission point (EP5) shall be located at least 450 feet from the nearest property boundary.
 - 5. **Record Keeping Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 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.
 - 6. **Reporting Requirement**
Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 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: 2013-05-008

Installation ID Number: PORT-0594

Permit Number:

Mansfield Lime & Stone Quarry, Inc. PORT-0594 Complete: May 2, 2013
3363 East State Highway 76
Kirbyville, MO 65679

Parent Company:
Mansfield Lime & Stone Quarry, Inc.
1726 Quarry Road
Mansfield, MO 65704

Taney County, S1 T22N R21W

PROJECT DESCRIPTION

Mansfield Lime & Stone Quarry, Inc. has applied for authority to construct a new portable rock crushing plant. This plant will be permitted to operate at the three sites listed in Table 2. A stationary rock crushing plant operates at each of these sites. This plant was initially permitted under Permit # 082007-004 (Project # 2007-04-101, PORT-0594) but was never started up. Mansfield Lime & Stone Quarry, Inc. now wants to start operating this plant; however, since it has been over two years since the permit was issued, a new application is being submitted. This portable plant will retain the original portable number of PORT-0594 as stated in Permit #082007-004. This portable plant will consist of the following equipment listed in Table 1.

Table 1: Equipment Description

Emission Unit	Description	MHDR
EP1	Pit Haul Road	VMT per location
EP2	Unload to grizzly	400 tph
EP3	Grizzly	400 tph
EP4	Grizzly side conveyor	400 tph
EP5	Primary Crusher	400 tph
EP6	Crusher Underconveyor	400 tph
EP7	Scalping Screen	400 tph
EP8	Scalping Screen Underconveyor	400 tph
EP9	Scalping Screen Cross Conveyor	400 tph
EP10	Scalping Screen Cross Conveyor	400 tph
EP11	Scalping Screen Feed Conveyor	400 tph
EP12a	Storage Pile Wind Erosion	2.0 Acres
EP12b	Storage Pile Vehicular Activity	VMT per location
EP12c	Storage Pile Loadout	400 tph

EP13	665 hp 2006 Detroit Diesel Series 60 Model 6064HV33, S/N06R0942935	400 tph
EP14	Customer Haul Road	VMT per location
EP15	Secondary Crusher	400 tph
EP16	Secondary Crusher Feed Conveyor	400 tph
EP17	Secondary Crusher Underconveyor	400 tph
EP18	Finish Screen #1	400 tph
EP19	Finish Screen #1 Feed Conveyor	400 tph
EP20	Finish Screen #1 Cross Conveyor	400 tph
EP21	Finish Screen #1 Cross Conveyor	400 tph
EP22	Finish Screen #2	400 tph
EP23	Finish Screen #2 Feed Conveyor	400 tph
EP24	Finish Screen #2 Cross Conveyor	400 tph
EP25	Finish Screen #2 Cross Conveyor	400 tph
EP26	Finish Screen #3	400 tph
EP27	Finish Screen #3 Cross Conveyor	400 tph
EP28	Finish Screen #3 Cross Conveyor	400 tph
EP29	Finish Screen #3 Cross Conveyor	400 tph
EP30	15 Miscellaneous Conveyors	6,000 tph

At the time of the application, the Mansfield Lime & Stone Quarry, Inc., Inc. proposed to operate PORT-0594 at 76 Quarry, Mountain Grove Quarry and Mansfield Quarry, located in Taney, Texas, and Wright Counties respectively as indicated in the table below, and therefore requests that this PORT-0594 be permitted at all three sites. A stationary rock crusher owned by Mansfield Lime and Stone, Inc. is located at each of these three sites. After their initial visit to the 76 Quarry, Mansfield Lime & Stone Quarry, Inc. will need to get a seven-day relocation permit to return or to locate at Mountain Grove Quarry and Mansfield Quarry. To locate at any other site other than the 76 Quarry, Mountain Grove Quarry and Mansfield Quarry, a 21-day relocation permit is required.

Table 2: Sites Approved by the Permit

Location	County	Site ID Number	Site Address	Section, Township, Range
76 Quarry	Taney	231-0022	3363 Highway 76 Kirbyville, MO 65679	S1, T22N, R21W
Mountain Grove Quarry	Texas	215-006	2504 Limestone Drive Mountain Grove, MO 65711	S2, T28N, R12W
Mansfield Quarry	Wright	229-0028	1726 Quarry Road Mansfield, MO 65704	S14 T28N R15W

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 initially located in Taney 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 permit was originally issued to Mansfield Lime & Stone Quarry, Inc. PORT-0594 from the Air Pollution Control Program, the portable rock crusher was not constructed within the two year period, therefore a new Construction Permit is required.

Table 3: Permit History

Permit Number	Description
082007-004	Construction of a new portable rock crusher PORT-0594 (never constructed)

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 not site specific and should not vary from site to site. The existing actual emissions were not available since this is a new portable plant. 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 are based on a voluntary limit to avoid dispersion modeling requirements found in 10 CSR 10-6.060 Section (6). The conditioned potential emissions include emissions from sources that will limit their production to ensure compliance with the NAAQS limit.

Table 4: 76 Quarry Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions of Process Equipment (tons/yr)	Existing Actual Emissions (New Plant)	^a Potential Emissions of the Application	^b Conditioned Potential Emissions
PM	25.0	30.99	N /A	111.82	67.32
PM ₁₀	15.0	13.44	N /A	40.02	24.19
PM _{2.5}	10.0	2.59	N /A	14.95	8.96
SO _x	40.0	0.04	N /A	0.04	0.02
NO _x	40.0	19.15	N /A	19.15	11.42
VOC	40.0	1.87	N /A	1.87	1.11
CO	100.0	16.02	N /A	16.02	9.55
Total HAPs	25.0	0.03	N /A	0.03	0.02

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

^aIncludes site specific haul road and storage pile emissions.

^bIndirect limit based on compliance with the NAAQS requirement.

Table 5: Mansfield Quarry Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions of Process Equipment (tons/yr)	Existing Actual Emissions (New Plant)	^a Potential Emissions of the Application	^b Conditioned Potential Emissions
PM	25.0	30.99	N /A	83.40	50.37
PM ₁₀	15.0	13.44	N /A	31.69	19.22
PM _{2.5}	10.0	2.59	N /A	9.95	5.98
SO _x	40.0	0.04	N /A	0.04	0.02
NO _x	40.0	19.15	N /A	19.15	11.42
VOC	40.0	1.87	N /A	1.87	1.11
CO	100.0	16.02	N /A	16.02	9.55
Total HAPs	25.0	0.03	N /A	0.03	0.02

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

^aIncludes site specific haul road and storage pile emissions.

^bIndirect limit based on compliance with the NAAQS requirement.

Table 6: Mountain Grove Quarry Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions of Process Equipment (tons/yr)	Existing Actual Emissions (New Plant)	^a Potential Emissions of the Application	^b Conditioned Potential Emissions
PM	25.0	30.99	N /A	104.51	49.69
PM ₁₀	15.0	13.44	N /A	43.15	20.59
PM _{2.5}	10.0	2.59	N /A	18.95	8.92
SO _x	40.0	0.04	N /A	0.04	0.02
NO _x	40.0	19.15	N /A	19.15	8.95
VOC	40.0	1.87	N /A	1.87	0.87
CO	100.0	16.02	N /A	16.02	7.49
Total HAPs	25.0	0.03	N /A	0.03	0.02

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

^aIncludes site specific haul road and storage pile emissions.

^bIndirect limit based on compliance with the NAAQS requirement.

Table 7: 76 Quarry Ambient Air Quality Impact Analysis

Pollutant	NAAQS/RAL (µg/m ³)	Averaging Time	^a Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	^b Daily Limit (tons/day)
^c PM ₁₀ (same)	150.0	24-hour	254.83	130	20.0	5,725.7
^d PM ₁₀ (separate)	150.0	24-hour	N/A	51.93	98.07	2,287.2

^aModeled impact at maximum capacity with controls

^bIndirect limit based on compliance with NAAQS.

^cSolitary operation or operation with other plants that are owned by Mansfield Lime & Stone Quarry, Inc.

^dOperation with other plants that are not owned by Mansfield Lime & Stone Quarry, Inc.

Table 8: Mansfield Quarry Ambient Air Quality Impact Analysis

Pollutant	NAAQS/RAL ($\mu\text{g}/\text{m}^3$)	Averaging Time	^a Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$)	Limited Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	^b Daily Limit (tons/day)
^c PM ₁₀ (same)	150.0	24-hour	254.83	130.0	20.0	5,725.7
^d PM ₁₀ (separate)	150.0	24-hour	N/A	51.93	98.07	2,287.2

^aModeled impact at maximum capacity with controls

^bIndirect limit based on compliance with NAAQS.

^cSolitary operation or operation with other plants that are owned by Mansfield Lime & Stone Quarry, Inc.

^dOperation with other plants that are not owned by Mansfield Lime & Stone Quarry, Inc.

Table 9: Mountain Grove Quarry Ambient Air Quality Impact Analysis

Pollutant	NAAQS/RAL ($\mu\text{g}/\text{m}^3$)	Averaging Time	^a Maximum Modeled Impact ($\mu\text{g}/\text{m}^3$)	Limited Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	^b Daily Limit (tons/day)
^c PM ₁₀ (same)	150.0	24-hour	409.02	130.0	20.0	5,725.7
^d PM ₁₀ (separate)	150.0	24-hour	N/A	51.93	98.07	1,790.6

^aModeled impact at maximum capacity with controls

^bIndirect limit based on compliance with NAAQS.

^cSolitary operation or operation with other plants that are owned by Mansfield Lime & Stone Quarry, Inc.

^dOperation with other plants that are not owned by Mansfield Lime & Stone Quarry, Inc.

EMISSIONS CALCULATIONS

Emissions for the project were calculated using emission factors found in the United States 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 greater than 1.5 % by weight.

Emissions from the diesel engines/generators were calculated using emission factors from AP-42 Section 3.4 “Large Stationary Diesel and All Stationary Dual-fuel 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 for PM and PM₁₀ and a 40% control efficiency for PM_{2.5} were 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% 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 Tables 7, 8, and 9. 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 NAAQS or 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 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.

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 Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall demonstrate compliance with the NAAQS.

76 Quarry

- When no other plants are located at the 76 Quarry, Mansfield Lime & Stone Quarry, Inc. must calculate the daily PORT-0594 plant and limit the total impact of that plant to not exceed the NAAQS using Attachment A.
- When plants that are owned by Mansfield Lime & Stone Quarry, Inc., which are referred to as same owner plants, are located at 76 Quarry, Mansfield Lime & Stone Quarry, Inc. must calculate the daily impact of each plant and limit the total impact of all plants to not exceed the NAAQS using Attachment A.
- When plants that are not owned by Mansfield Lime & Stone Quarry, Inc., which are referred to as separate owner plants, are located at 76 Quarry, Mansfield Lime & Stone Quarry, Inc. must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Mansfield Lime &

Stone Quarry, Inc. that are operating at the site. This total is limited to not exceed the NAAQS. Mansfield Lime & Stone Quarry, Inc. will limit the total impact of all plants they own and operate at the site to $51.93 \mu\text{g}/\text{m}^3$ when any plants they do not own are located at the site. Mansfield Lime & Stone Quarry, Inc. PORT-0594 is not permitted to operate with any plant that is not owned by Mansfield Lime & Stone Quarry, Inc. that has a separate owner background greater than $78.07 \mu\text{g}/\text{m}^3$. During this separate owner operations, Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall use Attachment B to demonstrate compliance with the NAAQS.

Mansfield Quarry

- When no other plants are located at the Mansfield Quarry, Mansfield Lime & Stone Quarry, Inc. must calculate the daily PORT-0594 plant and limit the total impact of that plant to not exceed the NAAQS using Attachment C.
- When plants that are owned by Mansfield Lime and Stone, Inc., which are referred to as same owner plants, are located at the Mansfield Quarry, Mansfield Lime and Stone, Inc., must calculate the daily impact of each plant and limit the total impact of all plants to not exceed the NAAQS using Attachment C.
- When plants that are not owned by Mansfield Lime & Stone Quarry, Inc., which are referred to as separate owner plants, are located at Mansfield Quarry, Mansfield Lime & Stone Quarry, Inc. must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Mansfield Lime & Stone Quarry, Inc. that are operating at the site. This total is limited to not exceed the NAAQS. Mansfield Lime & Stone Quarry, Inc. will limit the total impact of all plants they own and operate at the site to $51.93 \mu\text{g}/\text{m}^3$ when any plants they do not own are located at the site. Mansfield Lime & Stone Quarry, Inc. PORT-0594 is not permitted to operate with any plant that is not owned by Mansfield Lime & Stone Quarry, Inc. that has a separate owner background greater than $78.07 \mu\text{g}/\text{m}^3$. During this separate owner operations, Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall use Attachment D to demonstrate compliance with the NAAQS.

Mountain Grove Quarry

- When no other plants are located at the Mountain Grove Quarry, Mansfield Lime & Stone Quarry, Inc. must calculate the daily PORT-0594 plant and limit the total impact of that plant to not exceed the NAAQS using Attachment E.
- When plants that are owned by Mansfield Lime and Stone, Inc., which are referred to as same owner plants, are located at the Mountain Grove Quarry, Mansfield Lime and Stone, Inc., must calculate the daily impact of each plant and limit the total impact of all plants to not exceed the NAAQS using Attachment E.
- When plants that are not owned by Mansfield Lime & Stone Quarry, Inc., which are referred to as separate owner plants, are located at Mountain Grove Quarry, Mansfield Lime & Stone Quarry, Inc. must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by

Mansfield Lime & Stone Quarry, Inc. that are operating at the site. This total is limited to not exceed the NAAQS. Mansfield Lime & Stone Quarry, Inc. will limit the total impact of all plants they own and operate at the site to 51.93 $\mu\text{g}/\text{m}^3$ when any plants they do not own are located at the site. Mansfield Lime & Stone Quarry, Inc. PORT-0594 is not permitted to operate with any plant that is not owned by Mansfield Lime & Stone Quarry, Inc. that has a separate owner background greater than 78.07 $\mu\text{g}/\text{m}^3$. During this separate owner operations, Mansfield Lime & Stone Quarry, Inc. PORT-0594 shall use Attachment F to demonstrate compliance with the NAAQS.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. The conditioned potential emissions of PM and PM₁₀ are above de minimis levels but below the major source level.

APPLICABLE REQUIREMENTS

Mansfield Lime & Stone Quarry, Inc. PORT-0594 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.
- A Basic Operating Permit application is required for this installation within 30 days of commencement of operations.
- *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 IIII, "Standards of Performance for Stationary Compression Ignition Internal Combustion Engines" applies to the equipment.

- 40 CFR Part 63 Subpart ZZZZ, “National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines” applies to the 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 (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Kathy Kolb
New Source Review Unit

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated May 1, 2013, received May 2, 2013, designating Mansfield Lime & Stone Quarry, 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 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.

APPENDIX A

Abbreviations and Acronyms

%	percent	MMBtu	Million British thermal units
°F	degrees Fahrenheit	MMCF	million cubic feet
acfm	actual cubic feet per minute	MSDS	Material Safety Data Sheet
BACT	Best Available Control Technology	NAAQS ...	National Ambient Air Quality Standards
BMPs	Best Management Practices	NESHAPs ..	National Emissions Standards for Hazardous Air Pollutants
Btu	British thermal unit	NO_x	nitrogen oxides
CAM	Compliance Assurance Monitoring	NSPS	New Source Performance Standards
CAS	Chemical Abstracts Service	NSR	New Source Review
CEMS	Continuous Emission Monitor System	PM	particulate matter
CFR	Code of Federal Regulations	PM_{2.5}	particulate matter less than 2.5 microns in aerodynamic diameter
CO	carbon monoxide	PM₁₀	particulate matter less than 10 microns in aerodynamic diameter
CO₂	carbon dioxide	ppm	parts per million
CO_{2e}	carbon dioxide equivalent	PSD	Prevention of Significant Deterioration
COMS	Continuous Opacity Monitoring System	PTE	potential to emit
CSR	Code of State Regulations	RACT	Reasonable Available Control Technology
dscf	dry standard cubic feet	RAL	Risk Assessment Level
EQ	Emission Inventory Questionnaire	SCC	Source Classification Code
EP	Emission Point	scfm	standard cubic feet per minute
EPA	Environmental Protection Agency	SIC	Standard Industrial Classification
EU	Emission Unit	SIP	State Implementation Plan
fps	feet per second	SMAL	Screening Model Action Levels
ft	feet	SO_x	sulfur oxides
GACT	Generally Available Control Technology	SO₂	sulfur dioxide
GHG	Greenhouse Gas	tph	tons per hour
gpm	gallons per minute	tpy	tons per year
gr	grains	VMT	vehicle miles traveled
GWP	Global Warming Potential	VOC	Volatile Organic Compound
HAP	Hazardous Air Pollutant		
hr	hour		
hp	horsepower		
lb	pound		
lbs/hr	pounds per hour		
MACT	Maximum Achievable Control Technology		
µg/m³	micrograms per cubic meter		
m/s	meters per second		
Mgal	1,000 gallons		
MW	megawatt		
MHDR	maximum hourly design rate		

Mr. Don Wilson
Jr. Vice President
Mansfield Lime & Stone Quarry, Inc. PORT-0594
1726 Quarry Road
Mansfield, MO 65704

RE: New Source Review Permit - Project Number: 2013-05-008

Dear Mr. Wilson:

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 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, 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 at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southwest Regional Office
PAMS File: 2013-05-008

Permit Number: