

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: 092013-005

Project Number: 2013-05-038
Installation ID: PORT-0698

Parent Company: Magruder Limestone Co., Inc.

Parent Company Address: 255 Watson Road, Troy, MO 63379

Installation Name: Magruder Limestone Co., Inc.

Installation Address: Palo Road, Lincoln, MO 65338

Location Information: Benton County, S34 T42N R23W

Application for Authority to Construct was made for:
A portable RAP processing 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.

SEP - 9 2013

EFFECTIVE DATE



DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

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

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

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

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

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

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

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

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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**
Magruder Limestone Co., Inc. 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 Crushing Plant**
 - A. Magruder Limestone Co., Inc. shall not be operated at any location longer than 24 consecutive months except if the Site Specific Special Conditions of this portable plant, PORT-0698, contain a nonroad engine requirement limiting the portable plant at the site specific location to 12 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 crushing plant.
 - 1) If the portable 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 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**
Magruder Limestone Co., Inc. 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**
Magruder Limestone Co., Inc. 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.

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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-0698

Site ID Number: 131-0039

Site Name: Vaughn Quarry

Site Address: 14 Highway V, Eldon, MO 65206

Site County: Miller, S8 T40N R15W

1. **Best Management Practices Requirement**
Magruder Limestone Co., Inc. 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. Magruder Limestone Co., Inc. shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Magruder Limestone Co., Inc. shall demonstrate compliance with Special Condition 2.A using Attachment B or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Magruder Limestone Co., Inc. shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
 - C. Magruder Limestone Co., Inc. is exempt from the requirements of Special Condition 2.B when no other plants are operating at this site.
3. **Moisture Content Testing Requirement**
 - A. Magruder Limestone Co., Inc. shall verify that the moisture content of the processed material 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.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

- D. The test samples shall be taken from rock that has been processed by the plant or from each source of aggregate (e.g. quarry).
 - E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Magruder Limestone Co., Inc. 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, Magruder Limestone Co., Inc. 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 ten 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, Magruder Limestone Co., Inc. 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 (EP6) shall be located at least 50 feet from the nearest property boundary.
 - 5. **Primary Equipment Requirement**
Magruder Limestone Co., Inc. shall process all material through the primary crusher, Telsmith impact crusher, S/N 41687 (EP6). Bypassing the primary crusher is prohibited.
 - 6. **Nonroad Engine Requirement**
Magruder Limestone Co., Inc.'s engine for PORT-0698 cannot operate at this site longer than 12 consecutive months in order to avoid record keeping requirements to show that the John Deere 250 hp diesel engine (Model 66068HF485) meets the definition of a nonroad engine as stated in 40 CFR 89.2.
 - 7. **Concurrent Operation Restriction**
Magruder Limestone Co., Inc. PORT-0698 is only allowed to operate with other plants at this site whenever those plants are owned by Magruder Limestone Co.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

8. Record Keeping Requirement
Magruder Limestone Co., Inc. 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
Magruder Limestone Co., Inc. 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.

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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-0698

Site ID Number: 015-0035

Site Name: Smasal Quarry

Site Address: Palo Road, Lincoln, MO 65338

Site County: Benton S34 T42N R23W

1. Best Management Practices Requirement
Magruder Limestone Co., Inc. 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. Annual Emission Limit
 - A. Magruder Limestone Co., Inc. shall emit less than 10.0 tons of PM_{2.5} in any 12-month period from the entire installation.
 - B. Magruder Limestone Co., Inc. 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.
3. Moisture Content Testing Requirement
 - A. Magruder Limestone Co., Inc. shall verify that the moisture content of the processed material 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 material 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 Magruder Limestone Co., Inc. 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, Magruder Limestone Co., Inc. 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 ten 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, Magruder Limestone Co., Inc. 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 (EP6) shall be located at least 700 feet from the nearest property boundary.
 - 5. **Primary Equipment Requirement**
Magruder Limestone Co., Inc. shall process all rock through the primary crusher, Telsmith impact crusher, S/N 41687 (EP6). Bypassing the primary crusher is prohibited.
 - 6. **Nonroad Engine Requirement**
Magruder Limestone Co., Inc.'s engine for PORT-0698 cannot operate at this site longer than 12 consecutive months in order to avoid record keeping requirements to show that the John Deere 250 hp diesel engine (Model 66068HF485) meets the definition of a nonroad engine as stated in 40 CFR 89.2.
 - 7. **Concurrent Operation Restriction**
Magruder Limestone Co., Inc. is allowed to operate at Smasal Quarry whenever other plants are located at the site. Magruder Limestone Co., Inc. PORT-0698 when operating at the Smasal Quarry uses $9.68 \mu/m^3$ of the $65.0 \mu/m^3$ allotted by Smasal Quarry in Permit # 022006-007A and PORT-0698 does not need to track its own ambient air impact.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

8. Record Keeping Requirement
Magruder Limestone Co., Inc. 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
Magruder Limestone Co., Inc. 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.

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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-0698

Site ID Number: 141-0033

Site Name: Jeremiah Callahan Property

Site Address: Hwy 5 & Hwy J Junction, Gravois Mills, MO 65037

Site County: Morgan, S7 T41N T17W

1. **Best Management Practices Requirement**
Magruder Limestone Co., Inc. 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. Magruder Limestone Co., Inc. shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Magruder Limestone Co., Inc. shall demonstrate compliance with Special Condition 2.A using Attachment C or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Magruder Limestone Co., Inc. shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
 - C. Magruder Limestone Co., Inc. is exempt from the requirements of Special Condition 2.B when no other plants are operating at this site.
3. **Moisture Content Testing Requirement**
 - A. Magruder Limestone Co., Inc. shall verify that the moisture content of the processed material 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.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

- D. The test samples shall be taken from material that has been processed by the plant or from each source of aggregate (e.g. quarry).
 - E. The written analytical report shall include the raw data and moisture content of each sample, the test date and the original signature of the individual performing the test. The report shall be filed on-site or at the Magruder Limestone Co., Inc. 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, Magruder Limestone Co., Inc. 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, Magruder Limestone Co., Inc. 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 (EP6) shall be located at least 100 feet from the nearest property boundary.
5. **Primary Equipment Requirement**
Magruder Limestone Co., Inc. shall process all material through the primary crusher, Telsmith impact crusher, S/N 41687 (EP6). Bypassing the primary crusher is prohibited.
6. **Nonroad Engine Requirement**
Magruder Limestone Co., Inc.'s engine for PORT-0698 cannot operate at this site longer than 12 consecutive months in order to avoid record keeping requirements to show that the John 250 hp diesel engine (Model 66068HF485) meets the definition of a nonroad engine as stated in 40 CFR 89.2.
7. **Concurrent Operation Restriction**
Magruder Limestone Co., Inc. PORT-0698 is only allowed to operate with other plants at this site whenever those plants are owned by Magruder Limestone Co.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

8. Record Keeping Requirement
Magruder Limestone Co., Inc. 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
Magruder Limestone Co., Inc. shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than ten days after any exceedances of the limitations imposed by this permit.

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

Project Number: 2013-05-038

Installation ID Number: PORT-0698

Permit Number:

Magruder Limestone Co., Inc.
Palo Road
Lincoln, MO 65338

Complete: June 6, 2013

Parent Company:
Magruder Limestone Co., Inc.
255 Watson Road
Troy, MO 63379

Benton County, S34 T42N R23W

PROJECT DESCRIPTION

This project is for construction of a new portable (PORT-0698) Astec ProSizer 2612V crushing/RAP processing plant with a MHDR of 150 tons per hour. This portable plant will consist of the following equipment listed in Table 1.

Table 1: Equipment Description

Emission Unit	Description	MHDR
EP1	Haul Road	VMT per location
EP2	Feeder Bin with grizzly bars	150 tph
EP3	Conveyor	150 tph
EP4	2-deck screen (S/N 072836) PEP Vari-Vibe	150 tph
EP5	Conveyor	150 tph
EP6	Telsmith 24" x 30" horizontal shaft impact (HSI) crusher (S/N 41687)	150 tph
EP7	Conveyor	150 tph
EP8	Conveyor	150 tph
EP9a	Wind erosion	Acres per location
EP9b	Vehicular Activity	150 tph
EP9c	Load out from storage pile	150 tph
Non-road engine	John Deere 250 hp	250 hp

At the time of the application, the Magruder Limestone Co., Inc. proposed to operate PORT-0698 at Vaughn Quarry, Smasal Quarry and the Jeremiah Callahan property, located in Miller, Benton and Morgan Counties respectively as indicated in the table below, and therefore requests that this PORT-0698 be permitted at all three sites. After their initial visit to the Smasal Quarry, Magruder Limestone Co. will need to get a seven day relocation permit to locate to Vaughn Quarry and the Jeremiah Callahan property.

To locate at any other site other than the Vaughn Quarry, Smasal Quarry and Jeremiah Callahan property, a 21-day relocation permit is required.

Table 2: Sites Approved by the Permit

Location	County	Site ID Number	Site Address	Section, Township, Range
Smasal Quarry	Benton	015-0035	Palo Road, Lincoln, MO 65338	S34, T42N, R23W
Vaughn Quarry	Miller	131-0039	Palo Road, Eldon, MO 65026	8, T40N, R15W
Jeremiah Callahan property	Morgan	141-0033	Hwy 5 & Hwy J Junction, Gravois Mills, MO 65037	S7, T41N, R17W

This permit will designate that the minimum distance to the property line for PORT-0698 when located at Vaughn Quarry will be 50 feet, for Smasal Quarry will be 700 feet and for the Jeremiah Callahan property will be 100 feet.

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 at all locations.

PORT-0698 will be powered by a 250 hp John Deere diesel engine (Model 66068HF485), however it meets the definition of non-road engine as defined in 40 CFR 89.2. Therefore, the emissions of the engine were not included. Portable plants are allowed to operate at a site for 24 consecutive months. However, Magruder Limestone Co., Inc. has requested a voluntary 12 month operation limit at the site to ensure the non-road engine status of the diesel engine without record keeping.

This installation is located in Miller, Benton, and Morgan County, attainment status for all pollutants.

This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

No permits have been issued to Magruder Limestone Co., Inc. from the Air Pollution Control Program for PORT-0698 since this is a new portable plant. An EIQ has not been submitted since it is a new plant.

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are not site specific and should not vary from site to site. There are no existing actual emissions since this is a new 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 annual emission limit.

Table 3: Emissions Summary (tons per year) for Vaughn Quarry

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	2.62	N/A	12.90	9.38
PM ₁₀	15.0	0.97	N/A	5.14	3.77
PM _{2.5}	10.0	0.14	N/A	1.25	0.90
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO ₂ e)	75,000 / 100,000	N/A	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

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

^aIncludes site specific haul road and storage pile emissions

^bIndirect limit to comply with the NAAQS requirement

Table 4: Emissions Summary (tons per year) for Smasal Quarry

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	2.62	N/A	76.68	63.21
PM ₁₀	15.0	0.97	N/A	23.28	19.19
PM _{2.5}	10.0	0.14	N/A	12.13	<10.0
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO ₂ e)	75,000 / 100,000	N/A	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

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

^aIncludes site specific haul road and storage pile emissions

^bVoluntary conditional limit for PM_{2.5}

Table 5: Emissions Summary (tons per year) for Jeremiah Callahan Property

Air Pollutant	De Minimis Level/SMAL	Potential Emissions of Process Equipment (tons/yr)	Existing Actual Emissions (New Plant)	^a Potential Emissions of the Application	Conditioned Potential Emissions
PM	25.0	2.62	N/A	14.16	N/A
PM ₁₀	15.0	0.97	N/A	5.50	N/A
PM _{2.5}	10.0	0.14	N/A	1.46	N/A
SO _x	40.0	N/A	N/A	N/A	N/A
NO _x	40.0	N/A	N/A	N/A	N/A
VOC	40.0	N/A	N/A	N/A	N/A
CO	100.0	N/A	N/A	N/A	N/A
GHG (CO ₂ e)	75,000 / 100,000	N/A	N/A	N/A	N/A
GHG (mass)	0.0 / 100.0 / 250.0	N/A	N/A	N/A	N/A
Total HAPs	25.0	N/A	N/A	N/A	N/A

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

^aIncludes site specific haul road and storage pile emissions

Table 6 (Vaughn Quarry), Table 7 (Smasal Quarry) and Table 8 (Jeremiah Callahan property) summarizes the ambient air quality impact analysis. The maximum modeled impact is the impact of each pollutant when the plant is operating continuously. The 24-hour limited impacts and daily limit are based on compliance with the NAAQS for PM₁₀.

Table 6: Ambient Air Quality Impact Analysis for Vaughn Quarry

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 (Solitary/Same)	150.0	24-hour	194.35	130.0	20.0	2555.6

^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 Magruder Limestone Co., Inc.

Table 7: Ambient Air Quality Impact Analysis for Smasal Quarry

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/Solitary)	150.0	24-hour	9.68	N/A	20.0	3,600
^d PM ₁₀ (Separate)	150.0	24-hour	9.68	65.0	85.0	3,600

^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 Magruder Limestone Co., Inc.

^dOperation with other plants that are not owned by Magruder Limestone Co., Inc.

Table 8: Ambient Air Quality Impact Analysis for Jeremiah Callahan Property

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 (Solitary/Same)	150.0	24-hour	104.08	N/A	20.0	3,600

^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 Magruder Limestone Co., 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 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 or equal to 1.5 % by weight.

The engine emissions were not evaluated for this review as the diesel engine at this site is classified as a non-road engine. 40 CFR 63 Subpart ZZZZ, “National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines” and 40 CFR 60 Subpart IIII, “Standards of Performance for Stationary Compression Ignition Internal Combustion Engines” do not apply. However, if the engine for this portable plant were to remain in one location for longer than 12 consecutive months, it would not be in compliance with this permit because engine emissions were not evaluated. It may also not be in compliance with MACT ZZZZ. NSPS IIII may also apply since this engine was manufactured after 2006.

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 at least 1.5% by weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program’s Emissions Inventory Questionnaire Form 2.8 “Storage Pile Worksheet.”

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 6, Table 7, and Table 8. 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.

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

OPERATING SCENARIOS

The plant is permitted to operate with other plants located at the site as long as the NAAQS is not exceeded. The following scenarios explain how Magruder Limestone Co., Inc. shall demonstrate compliance with the NAAQS.

Smasal Quarry

- Magruder Limestone Co., Inc. PORT-0698 when operating at the Smasal Quarry uses $9.68 \mu\text{g}/\text{m}^3$ of the $65.0 \mu\text{g}/\text{m}^3$ allotted by Smasal Quarry and PORT-0698 does not need to track their ambient air impact.

Vaughn Quarry

- When no other plants are located at the Vaughn Quarry, Magruder Limestone Co., Inc. must calculate the daily PORT-0275 plant and limit the total impact of that plant to not exceed the NAAQS using Attachment B.
- When plants that are owned by Magruder Limestone Co., Inc., which are referred to as same owner plants, are located at the Vaughn Quarry, Magruder Limestone Co., Inc. must calculate the daily impact of each plant and limit the total impact of all plants to not exceed the NAAQS using Attachment B.

Jeremiah Callahan Property

- When no other plants are located at the Jeremiah Callahan property, Magruder Limestone Co., Inc. do not need to track their own ambient air impact.
- When plants that are owned by Magruder Limestone Co., Inc., which are referred to as same owner plants, are located at the Jeremiah Callahan property, Magruder Limestone Co., 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.

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

Magruder Limestone Co., Inc. 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.
- An Operating Permit is not required because this plant is a portable plant and is exempt according to 10 CSR 10-6.065(C)20.
- *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

- 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.
- Subpart 000—Standards of Performance for Nonmetallic Mineral Processing Plants does not apply because according to §60.670(c)(2), portable crushed stone plants with capacities of 136 megagrams per hour (150 tons per hour) or less are not subject to the provisions of Subpart 000.

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 14, 2013, received May 20, 2013, designating Magruder Limestone Co., 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. Harold Bono
Corporate Secretary
Magruder Limestone Co., Inc.
255 Watson Road
Troy, MO 63379

RE: New Source Review Permit - Project Number: 2013-05-038

Dear Mr. Bono:

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 by telephone 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:kkk

Enclosures

c: Kansas City Regional Office
PAMS File: 2013-05-038

Permit Number: