

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: 042014-002

Project Number: 2014-01-004
Installation ID: PORT-0664

Parent Company: Layne GEO

Parent Company Address: 22537 Coleman's Mill Road, Ruther Glen, VA 22546

Installation Name: Layne GEO Grout Plant

Installation Address: 1197 County Road 736, Bunker, MO 63629

Location Information: Reynolds County, S2, T31N, R2W

Application for Authority to Construct was made for:

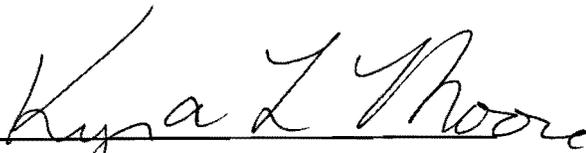
Locating two grout mixers and the associated equipment at a Doe Run Company property to create mining vents. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

APR - 7 2014

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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| Permit No. | |
| Project No. | 2014-01-004 |

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**
Layne GEO Grout Plant 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 grout plant.
2. **Relocation of Portable Grout Plant**
 - A. Layne GEO Grout Plant shall not be operated at any location longer than 24 consecutive months except if the Site Specific Special Conditions of this portable plant, PORT-0664, 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 grout plant.
 - 1) If the portable grout 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 grout 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**
Layne GEO Grout Plant 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**
Layne GEO Grout Plant 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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| Permit No. | |
| Project No. | 2014-01-004 |

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-0664

Site ID Number: PORT-0664

Site Name: Doe Run Company vent site

Site Address: 1197 County Road 736, Bunker, MO 63629

Site County: Reynolds County S2, T31N, R2W

1. Best Management Practices Requirement
Layne GEO Grout Plant 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.
2. Annual Emission Limit
 - A. Layne GEO Grout Plant shall emit less than 10.0 tons of PM_{2.5} in any 12-month period from the entire installation.
 - B. Layne GEO Grout Plant 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. Control Device Requirement-Baghouse
 - A. Layne GEO Grout Plant shall control emissions from the equipment listed below using baghouses as specified in the permit application.
 - 1) Cement Silo (EU-03)
 - 2) Supplement Silo (EU-04)
 - B. The baghouses shall be operated and maintained in accordance with the manufacturer's specifications. The baghouse shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that Department of Natural Resources employees may easily observe them.
 - C. Replacement filters for the baghouses shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

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| Permit No. | |
| Project No. | 2014-01-004 |

SITE SPECIFIC SPECIAL CONDITIONS:

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

- D. Layne GEO Grout Plant shall monitor and record the operating pressure drop across the baghouses at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.
- E. Layne GEO Grout Plant shall maintain a copy of the baghouse manufacturer's performance warranty on site.
- F. Layne GEO Grout Plant shall maintain an operating and maintenance log for the baghouses which shall include the following:
 - 1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - 2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.
- 4. **Minimum Distance to Property Boundary Requirement**
The primary emission points, the grout mixers (EU-6 and EU-14), shall be located at least 1875 feet from the nearest property boundary.
- 5. **Concurrent Operation Restriction**
Layne GEO Grout Plant is prohibited from operating whenever other plants are located at the site.
- 6. **Nonroad Engine Requirements**
Layne GEO Grout Plant cannot operate at this site longer than 12 consecutive months in order to avoid recordkeeping showing the movement of the engine. To meet the definition of a nonroad engine as stated in 40 CFR 89.2, the engine cannot remain in one physical location for longer than 12 consecutive months.
- 7. **Record Keeping Requirement**
Layne GEO Grout Plant 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.
- 8. **Reporting Requirement**
Layne GEO Grout Plant shall report to the Air Pollution Control Program's 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: 2014-01-004

Installation ID Number: PORT-0664

Permit Number:

Layne GEO Grout Plant
1197 County Road 736
Bunker, MO 63629

Complete: January 3, 2014

Parent Company:
Layne GEO
22537 Coleman's Mill Road
Ruther Glen, VA 22546

Reynolds County, S2, T31N, R2W

PROJECT DESCRIPTION

Layne GEO plans to locate a grout plant on a Doe Run Company owned property. The plant will consist of four silos, a sand stockpile, two pumps, a Zimmerman mixer (EU-14), a Techniwell mixer (EU-6), and a Caterpillar generator. The two mixers will produce different products. The Zimmerman mixer will produce low mobility grout that will have a consistency similar to concrete that will be pumped to the vent holes via a Putzmeister TK15 concrete plant at a rate equal to 20 cubic yards of grout per hour. The low mobility grout will consist of sand, water, cement, and fly ash. The Techniwell mixer will produce high mobility grout that will be pumped to the vent holes via a moyno pump at a rate equal to 27 cubic yards of grout per hour. The high mobility grout will consist of Whelan gum, water, super plasticizer, bentonite slurry, cement, and fly ash. The two types of grout will be used to create ventilation shafts for a Doe Run Company mine. Layne GEO Grout plant (PORT-0664) is prohibited from operating at this site when other plants are located here. The potential emissions for the engine associated with this plant are based on a worst case assumption that the engine operates continuously. Potential emissions of VOCs from the super plasticizer are based on a mass balance approach assuming that 100% VOC are emitted to the atmosphere. Particulate emissions from bentonite and Whelan gum transfer to blending are based on an emission factor for SCC 3-03-023-45 from EPA Technology Transfer Network Clearinghouse for Inventories & Emissions Factors (WebFIRE). An operating permit is not required for this site at this time because the plant is portable.

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 Reynolds County, an attainment area for all criteria pollutants.

The plant will be powered by a Caterpillar diesel engine, however it meets the definition of nonroad engine as defined in 40 CFR 89.2 (1)(i). Therefore, the emissions of the engine were not included in the project emissions.

This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.

No permits have been issued to Layne GEO Grout Plant from the Air Pollution Control Program.

TABLES

The table below summarizes the emissions of this project. The potential emissions of the process equipment, which excluded emissions from haul roads and wind erosion, are not site specific and should not vary from site to site. The existing actual emissions are not available because this is a new installation. 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 the de minimis level. Layne GEO Grout Plant will limit the actual emissions in any consecutive 12-month period from the entire plant less than 10.0 tons of PM_{2.5} as required by Special Condition 2. The conditioned potential emissions are based on a voluntary limit to avoid dispersion modeling requirements found in 10 CSR 10-6.060 Section (6).

Table 1: Emissions Summary (tons per year)

| Air Pollutant | De Minimis Level | ^a Potential Emissions of Process Equipment | Existing Actual Emissions | ^b Potential Emissions of the Application | Conditioned Potential Emissions |
|-------------------------|------------------|---|---------------------------|---|---------------------------------|
| PM | 25.0 | 85.5 | N/A | 204.9 | 54.21 |
| PM ₁₀ | 15.0 | 24.7 | N/A | 60.0 | 16.04 |
| PM _{2.5} | 10.0 | 22.5 | N/A | 43.625 | <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 | 1.47 | N/A | 1.47 | 0.48 |
| CO | 100.0 | N/A | N/A | N/A | N/A |
| GHG (CO ₂ e) | 100,000 | N/A | N/A | N/A | N/A |
| GHG (mass) | 0.0 / 100.0 | N/A | N/A | N/A | N/A |
| Total HAPs | 25.0 | N/A | N/A | N/A | N/A |

N/A = Not Applicable

^aPotential Emissions of Process Equipment

^bIncludes site specific haul road and storage pile emissions

Table 2: Ambient Air Quality Impact Analysis

| Pollutant | ^a NAAQS (µg/m ³) | Averaging Time | ^b Maximum Modeled Impact (µg/m ³) | Limited Impact (µg/m ³) | Background (µg/m ³) | Daily Limit (tons/day) |
|--|---|----------------|--|-------------------------------------|---------------------------------|------------------------|
| ^c PM ₁₀ (solitary) | 150.0 | 24-hour | 51.7 | N/A | 20.0 | N/A |

^aNational Ambient Air Quality Standards (NAAQS)

^bModeled impact at maximum capacity with controls

^cLayne GEO Grout Plant is prohibited from operating when other plants are located at this site

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 grout plant were calculated using emission factors from AP-42 Section 11.12 “Concrete Batching,” June 2006. This section cites Equation (1) in Section 13.2.4 “Aggregate Handling and Storage Piles,” November 2006 for calculating the emissions from aggregate and sand transfer. The cement and supplement silos are controlled with baghouses, so the controlled emission factors were used. Potential VOC emissions were calculated using a mass balance approach assuming the 100% of VOC are emitted to the atmosphere. The VOC content of the super plasticizer is 59% by weight according to the MSDS.

The engine emissions were not evaluated for this review as the diesel engine at this site is classified as a nonroad 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 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 does not apply unless the engine is modified or reconstructed and the plant is in one location for longer than 12 consecutive months. The nonroad engine is subject to further applicable requirements in 40 CFR 89 and 40 CFR 1039 which are outside the purview of this program.

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} are 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. 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 2. 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. Since this plant produces a concrete-like grout, an AAQIA was performed for this permit. An AAQIA is required for other pollutants if their emissions exceed their respective de minimis or screening model action level (SMAL). The AAQIA was performed using the Air Pollution Control Program's generic nomographs and when appropriate the EPA modeling software AERSCREEN. For each pollutant that was modeled, the maximum concentration that occurs at or beyond the site boundary was compared to the National Ambient Air Quality Standard (NAAQS) or Risk Assessment Level (RAL) for the pollutant. If during continuous operation the modeled concentration of a pollutant is greater than the applicable NAAQS or RAL, the plant's production is limited to ensure compliance with the standard.

This plant uses BMPs to control emissions from haul roads and vehicular activity areas, so emissions from these sources were not included in the AAQIA. Instead they were addressed as a background concentration of 20 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM and PM₁₀ exceed the respective de minimis levels.

APPLICABLE REQUIREMENTS

Layne GEO Grout Plant 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.
- No Operating Permit is required for this installation.
- *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

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400 applies to the weigh hopper but it is inherently compliant.
- None of the New Source Performance Standards (NSPS) apply to the installation. Standards of Performance for Nonmetallic Mineral Processing Plants (NSPS OOO) does not apply to this installation
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) or National Emission Standards for Hazardous Air Pollutants for Source Categories (MACTS) apply to the proposed equipment.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

J Luebbert
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 December 31, 2013, received January 3, 2014, designating Layne GEO as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

Attachment A: PM_{2.5} Annual Emissions Tracking Sheet
 Layne GEO Grout Plant PORT-0664
 Project Number: 2014-01-004
 Permit Number:

Site Name: Doe Run Company vent site
 Site Address: 1197 County Road 736, Bunker, MO 63629
 Site County: Reynolds County, S2, T31N, R2W

This sheet covers the period from _____ to _____ (Copy as needed)
 (Month, Day Year) (Month, Day Year)

| Month | Grout Mixing Plant | Production (tons) | Emission Factor (lb/ton) | Monthly Emissions ¹ (lbs) | Monthly Emissions ² (tons) | 12-Month Total Emissions ³ (tons) |
|----------------|--------------------|-------------------|--------------------------|--------------------------------------|---------------------------------------|--|
| <i>Example</i> | <i>Techniwell</i> | <i>27,000</i> | <i>0.196</i> | <i>7452.0</i> | <i>3.73</i> | <i>4.73</i> |
| | <i>Zimmerman</i> | <i>27,000</i> | <i>0.08</i> | | | |
| | Techniwell | | 0.196 | | | |
| | Zimmerman | | 0.08 | | | |
| | Techniwell | | 0.196 | | | |
| | Zimmerman | | 0.08 | | | |
| | Techniwell | | 0.196 | | | |
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| | Zimmerman | | 0.08 | | | |
| | Techniwell | | 0.196 | | | |
| | Zimmerman | | 0.08 | | | |

¹Multiply the monthly production by the emission factor for each mixer and add the total emissions together.
²Divide the monthly emissions (lbs) by 2000.
³Add the monthly emissions (tons) to the sum of the monthly emissions from the previous eleven months. A total of less than **10.0** tons of PM_{2.5} is necessary for compliance.

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 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.)

APPENDIX A

Abbreviations and Acronyms

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

Mr. Timothy Myers
Regional General Manager
Layne GEO Grout Plant
22537 Coleman's Mill Road
Ruther Glen, VA 22546

RE: New Source Review Permit - Project Number: 2014-01-004

Dear Mr. Myers:

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 and 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 regarding this permit, please do not hesitate to contact J Luebbert, 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:jlk

Enclosures

c: Southeast Regional Office
PAMS File: 2014-01-004

Permit Number: