

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:

012016-007

Project Number: 2015-07-031

Installation ID: 093-0033

Parent Company:

Aggregate Holding, LLC

Parent Company Address: 1952 County Road 96, Ironton, MO 63650

Installation Name:

Trap Rock & Granite, LLC

Installation Address:

11313 Highway N, Ironton, MO 63650

Location Information:

Iron County, S12 T34N R3E

Application for Authority to Construct was made for:

Addition of two wash screens and associated conveyors. This review was conducted in accordance with Section (5

), Missouri State Rule 10 CSR 10-6.060, Construction Permits Required.

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

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

JAN 19 2016

EFFECTIVE DATE

Kyra L. Hardy

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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SITE SPECIFIC SPECIAL CONDITIONS:

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

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

1. **Best Management Practices Requirement**
Trap Rock & Granite, LLC 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. Trap Rock & Granite, LLC shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation. (Re-establishes this limit from Permit #102014-015.)
 - B. Trap Rock & Granite, LLC shall demonstrate compliance with Special Condition 2.A using Attachment A or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
3. **Wet Suppression Control System Requirement**
 - A. Trap Rock & Granite, LLC shall install and operate wet spray devices on all crushers and screens.
 - B. Watering may be suspended during periods of freezing condition, when use of the wet spray devices may damage the equipment. During these conditions, Trap Rock & Granite, LLC shall adjust the production rate to control emissions from these units. Trap Rock & Granite, LLC shall record a brief description of such events.
4. **Minimum Distance to Property Boundary Requirement**
The primary emission point shall be located at least 700 feet from the nearest property boundary.
5. **Concurrent Operation Restriction**
Trap Rock & Granite, LLC is prohibited from operating whenever other plants are located at the site.
6. **Primary Equipment Requirement**
Trap Rock & Granite, LLC shall process all rock through the primary crusher (EU-1b Lippmann). Bypassing the primary crusher is prohibited.

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SITE SPECIFIC SPECIAL CONDITIONS:

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

7. Record Keeping Requirement
Trap Rock & Granite, LLC 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
Trap Rock & Granite, LLC 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 (5) REVIEW

Project Number: 2015-07-031
Installation ID Number: 093-0033
Permit Number:

Trap Rock & Granite, LLC
11313 Highway N
Ironton, MO 63650

Complete: July 28, 2015

Parent Company:
Aggregate Holding, LLC
1952 County Road 96
Ironton, MO 63650

Iron County, S12 T34N R3E

PROJECT DESCRIPTION

Trap Rock and Granite Quarries, LLC is adding a new wash station in conjunction with its temporary rock crushing operation in Iron County, Missouri near the town of Middle Brook. The site address is 11313 Highway N, Ironton, Missouri 63650. At this time, the plant is adding two (2) Diester TD 3 deck wash screens, six (6) conveyors, two (2) stackers, one feed hopper and an auger transfer system. Also added to the plant will be four (4) slurry pumps and associated piping for washing the crushed aggregate as it moves through the crushing process. The existing Screen #2 (EU-17) will be relocated in the new position of Screen #3. Screen #2 will be the new Wash Screen/Station and Screen #4 will be the ballast rinse. Screens #2, #3 and #4 will be operating parallel. The product from the top deck from Screen #1 will flow to the cone crusher and onto Screen #3. The product from the second deck of Screen #1 will flow through Wash Screen/Station and the product from the third deck will flow through the ballast wash. Their associated conveyors and auger will be saturated with water and therefore no emissions were calculated for this equipment. As with the existing equipment, power is supplied off the grid. The MHDR of the equipment will be 700 tph with the exception of one of the conveyors located after the Lippman crusher (EU 1b) with the MHDR of 1000 tph.

In order to obtain maximum potential of emissions for this project, emissions were calculated with the product flowing through Screen #3 and associated conveyors. There are four conveyor flows off of the "dry" #3 screen, each flow consisting of at least two conveyors. For PTE calculation purposes, three of these conveyor flows will have a MHDR of zero tons per hour, because the maximum MHDR is calculated through one series of the multiple conveyors from Screen #3. All of the conveyors on the screen can process material at a given time, not exceeding the MHDR of the screen. All of these conveyors will be allocated with water spray devices from the existing Nesco water spray system.

A feed hopper will reintroduce washed product after Screen #2 (EU-17) into the system to be washed again.

There are no extra haul roads or storage piles associated with project.

The applicant is using one of the methods described in Attachment AA, "Best Management Practices," to control emissions from the existing haul roads and vehicular activity areas.

This installation is located in Iron County, an attainment area for all criteria pollutants..

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

TABLES

The following permits have been issued to Trap Rock & Granite, LLC from the Air Pollution Control Program.

Table 1: Permit History

Permit Number	Description
102014-015	Rock Quarry Operation

Table 2: Trap Rock & Granite, LLC New Equipment List:

Emission Unit	Description of Unit	MHDR (tph)	Control Type
EU23	Conveyors coming off of Screen #3 (4 possible conveyors)	700	Water Spray Device
EU24	Conveyor 2nd drop pt. from 1 of 3 previous conveyor runs	700	Water Spray Device
EU25	Feed hopper (Refeed washed material)	221	Water Spray Device
EU26	Conveyor following underconveyor from Lippman crusher and grizzly	1000	Water Spray Device

The following table provides an emissions summary for this project. Existing potential emissions were taken from Permit # 102014-015. Existing actual emissions from the installation are not available because the facility has not been in operation for a full calendar year. Potential emissions of the application represent the potential of the new conveyors and associated rock crushing equipment, assuming continuous operation (8760 hours per year) and the new total conditioned emissions for the entire facility. The conditioned potential emission stated in Table 3 re-establishes the 15 ton per year PM₁₀ limit for the entire facility.

Table 3: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Potential Emissions Of New Equipment (tons/yr)	Existing Actual Emissions (2014 EIQ)	^a Potential Emissions of the Entire Facility	Conditioned Potential Emissions
PM	25.0	1.38	N/A	137.40	38.55
PM ₁₀	15.0	0.46	N/A	53.51	<15.0
PM _{2.5}	10.0	0.13	N/A	12.88	3.61
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)	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

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

^aIncludes site specific haul road and storage pile emissions

Table 4 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, but is not applicable here since the maximum modeled impact is below the NAAQS for PM₁₀.

Table 4: 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)	Daily Limit (tons/day)
^b PM ₁₀ (solitary)	150.0	24-hour	118.14	N/A	20.0	N/A

^aModeled impact at maximum capacity with controls.

^bSolitary operation

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 equipment is controlled by water spray devices.

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 0.7% by weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Air Pollution Control Program's Emissions Inventory Questionnaire Form 2.8 "Storage Pile Worksheet."

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 3. 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 µg/m³ of PM₁₀ in accordance with the Air Pollution Control Program's BMPs interim policy.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below de minimis and no refined modeling is required. Potential emissions of PM are above de minimis but below major source levels. There are no modeling requirements for PM.

APPLICABLE REQUIREMENTS

Trap Rock & Granite, LLC shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110.
- A Basic Operating Permit application is not required for this installation since the facility is taking a 15 ton per year limit for PM₁₀.
- *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 New Source Performance Standards (NSPS) apply to the 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 (5), 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 July 13, 2015, received July 21, 2015, designating Aggregate Holding, LLC as the owner and operator of the installation.

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 emissions 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	SDS	Safety Data Sheet
EU	Emission Unit	SIC	Standard Industrial Classification
fps	feet per second	SIP	State Implementation Plan
ft	feet	SMAL	Screening Model Action Levels
GACT	Generally Available Control Technology	SO_x	sulfur oxides
GHG	Greenhouse Gas	SO₂	sulfur dioxide
gpm	gallons per minute	tph	tons per hour
gr	grains	tpy	tons per year
GWP	Global Warming Potential	VMT	vehicle miles traveled
HAP	Hazardous Air Pollutant	VOC	Volatile Organic Compound
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. Bill Emmendorfer
Site Superintendent
Trap Rock & Granite, LLC
1952 County Road 96
Ironton, MO 63650

RE: New Source Review Permit - Project Number: 2015-07-031

Dear Mr. Emmendorfer:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. 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 and with your amended operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 Administrative Hearing Commission, Truman State Office Building, Jefferson City, Missouri 65102, www.oa.mo.gov/ahc. If you have questions, please contact Kathy Kolb, at the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:kk1

Enclosures

c: Southeast Regional Office
PAMS File: 2015-07-031
Permit Number: