

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: 082013-009

Project Number: 2013-05-003
Installation ID: 186-0056

Parent Company: Summit Proppants, Inc.

Parent Company Address: 6582 Beaver Dam Road, Cromwell, KY 42333

Installation Name: Summit Proppants, Inc.

Installation Address: Colony Church Road, Farmington, MO 63640

Location Information: Ste. Genevieve County, S22 T36N R6E

Application for Authority to Construct was made for:

The installation of a sand processing plant to produce proppant sand. 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.

AUG 20 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 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.

Page No.	3
Permit No.	
Project No.	2013-05-003

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**
Summit Proppants, 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. Summit Proppants, Inc. shall not cause an exceedance of the NAAQS for PM₁₀ of 150.0 µg/m³ 24-hour average in ambient air.
 - B. Summit Proppants, Inc. shall demonstrate compliance with Special Condition 2.A using Attachment A and Attachment B or other equivalent forms that have been approved by the Air Pollution Control Program, including an electronic forms. Summit Proppants, Inc. shall account for the impacts from other sources of PM₁₀ as instructed in the attachments.
 - C. Summit Proppants, Inc. is exempt from the requirements of Special Condition 2.B when no other plants are operating at this site.
 - D. Summit Proppants, Inc. is exempt from the requirements of Special Condition 2.B when only operating with other plants that are not owned by Summit Proppants, Inc. at this site.
3. **Annual Emission Limit**
 - A. Summit Proppants, Inc. shall emit less than 15.0 tons of PM₁₀ in any 12-month period from the entire installation as defined in Table 2 of this permit.
 - B. Summit Proppants, Inc. shall demonstrate compliance with Special Condition 3.A using Attachment C or another equivalent form that has been approved by the Air Pollution Control Program, including an electronic form.
4. **Moisture Content Testing Requirement**
 - A. Summit Proppants, Inc. shall verify that the moisture content of the processed sand prior to the wash screens 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.

Page No.	4
Permit No.	
Project No.	2013-05-003

SPECIAL CONDITIONS:

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

- 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 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 Summit Proppants, Inc. main office within 30 days of completion of the required test.
 - E. If the moisture content of either of the two tests is less than the moisture content in Special Condition 4.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Summit Proppants, 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.
5. Silt Content Testing Requirement
- A. Summit Proppants, Inc. shall verify that the silt content of the ultra-fines in the ultra-fines storage is less than or equal to 2.60 percent by weight.
 - B. Testing shall be conducted according to the method prescribed by the ASTM C117-04, C-136 or another approved by the Director.
 - C. The initial test shall be conducted no later than 45 days after the start of operation.
 - D. The written analytical report shall include the raw data and silt 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 Summit Proppants, Inc. main office within 30 days of completion of the required test.
 - E. If the silt content of the test is greater than the silt content in Special Condition 5.A, another test may be performed within 15 days of the noncompliant test. If the results of that test also exceed the limit, Summit Proppants, Inc. shall apply for a new permit to account for the revised information
6. Minimum Distance to Property Boundary Requirement
- The primary emission point, which is the wash screens (EP9), shall be located at least 400 feet from the nearest property boundary.

SPECIAL CONDITIONS:

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

7. Primary Equipment Requirement
Summit Proppants, Inc. shall process all sand through the wash screens. Bypassing the wash screens is prohibited.
8. Equipment Requirement – Opacity
 - A. Summit Proppants, Inc. shall have zero (0) percent opacity present while operating the equipment listed in Table 1 and the transfer points listed in Table 2

Table 1: Non-Emission Units

Description
Wash Screens
Fines Material Screw Washer
Five Cell Attrition Scrubber
Hydrosizer
Dewatering Screen

Note: For further description of each non-emission units please see the project description.

Table 2: Non-Emission Transfer Points

Transfer Point Description
Wash Screens to Fines Material Washer
Fines Material Washer to Five Cell Attrition Scrubber
Five Cell Attrition Scrubber to Sump/Pump #1
Hydrocyclone #1 to Hydrosizer
Hydrosizer to Dewatering Screen

- B. Summit Proppants, Inc. shall demonstrate compliance with Special Condition 8.A. by performing a general observation of the equipment listed in Table 1 and the transfer points listed in Table 2 on a daily basis while in operation. During this observation Summit Proppants, Inc. shall note the following:
 - 1) Whether any air emissions were visible from the non-emission points listed in Table 1 and 2; and
 - 2) If any visible emissions are observed Summit Proppants, Inc. shall determine the source of the visible emissions.
- C. At any occurrence where visible emissions are observed from the equipment listed in Table 1 or transfer points listed in Table 2, Summit Proppants, Inc. shall:
 - 1) Immediately implement a corrective action to eliminate any visible emissions being released by the equipment listed in Table 1 or the transfer points listed in Table 2.
 - 2) Notify the Compliance/Enforcement Section of the Air Pollution Control Program within 10 days of the violating observation, detailing the results of the violating observation and the corrective action to eliminate any visible

Page No.	6
Permit No.	
Project No.	2013-05-003

SPECIAL CONDITIONS:

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

emissions being released by the equipment listed in Table 1 or the transfer points listed in Table 2.

- D. If the corrective action does not eliminate the visible emission being emitted by any of the equipment listed in Table 1 or the transfer points listed in Table 2 Summit Proppants, Inc. shall apply for a new permit to account for the revised information within 30 days of the violating observation.

- 9. Equipment Requirement - Operation
 - A. Summit Proppants, Inc. shall operate the equipment listed in Table 1 according to the manufacturer's specifications.

 - B. Summit Proppants, Inc. shall maintain a copy of the manufacturer's specifications for each piece of equipment listed in Table 1 on site at all times.

- 10. Record Keeping Requirement
Summit Proppants, Inc. shall maintain all records required by this permit for no less than five years and make them available to any Missouri Department of Natural Resources personnel upon request.

- 11. Reporting Requirement
Summit Proppants, Inc. shall report to the Air Pollution Control Program Enforcement Section P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after any exceedances of the limitations imposed by this permit.

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

Project Number: 2013-05-003
Installation ID Number: 186-0056
Permit Number:

Summit Proppants, Inc.
Colony Church Road
Farmington, MO 63640

Complete: April 30, 2013

Parent Company:
Summit Proppants, Inc.
6582 Beaver Dam Road
Cromwell, KY 42333

Ste. Genevieve County, S22 T36N R6E

PROJECT DESCRIPTION

Summit Proppants, Inc. (Summit) has proposed to install a sand processing plant in the Ste. Genevieve County located on Colony Church Road near Farmington, Missouri. The plant consists of the following emission points:

Table 3: Summit Proppants Installation Equipment/Emission Point List

Emission Point	Description	True MHDR (tph)	Bottlenecked MHDR (tph)
EP1	Unloading trucks to hopper	N/D	275.0
EP2	Hopper to conveyor	N/D	275.0
EP3	Conveyor to grizzly feeder	N/D	275.0
EP4	Grizzly feeder	400.0	275.0
EP5	Primary crusher	400.0	275.0
EP6	Conveyor to HSI crusher	N/D	275.0
EP7	HSI crusher	400.0	275.0
EP8	Conveyor to wash screens	N/D	275.0
Non-emission point	2 Wash screens each 6x16	275.0 Combined (Bottleneck Point)	275.0 Combined
EP9	Wash screens to conveyor	N/D	27.0
EP10	Conveyor to radial stacker	N/D	27.0
EP11	Radial stacker to reject stock pile	N/D	27.0
Non-emission point	Wash screens to fine material washer (Slurry)	N/D	248.0
Non-emission point	Fine Material Washer 248 tph (Water Bath)	N/D	248.0
Non-emission point	Fine material washer to 5 cell attrition scrubber (70-75% solids)	N/D	240.0
Non-emission point	5 cell attrition scrubber 240 tph (Slurry)	N/D	240.0

Non-emission point	Five cell attrition scrubber to sump pump #1 (Slurry @ 70-75% Solids)	N/D	240.0
Non-emission point	Sump/pump #1 to cyclone #1 (Slurry)	N/D	240.0
Non-emission point	Cyclone #1 to Hydrosizer (Hydrosizer Full of Water)	N/D	234.0
Non-emission point	Hydrosizer (Water Bath)	N/D	234.0
Non-emission point	Hydrosizer to dewatering screen (60-70% Solids)	N/D	234.0
Non-emission point	Dewatering Screen	N/D	234.0
EP12	Dewater screen to conveyor (Comes out of screen at 85-90% Solids)	N/D	224.0
EP13	Conveyor to radial stacker	N/D	224.0
EP14	Radial stacker to finished product stock pile	N/D	224.0
Non-emission point	Fine material washer to sump pump#2 app (Slurry)	N/D	8.0
Non-emission point	Fines from hydrosizer to sump pump #2 app (Slurry)	N/D	8.0
Non-emission point	Fines from dewatering screen to sump pump #2 (Slurry)	N/D	2.0
Non-emission point	Fines from Cyclone #1 to sump pump #2 (Slurry)	N/D	6.0
Non-emission point	Sump/pump #2 to cyclone #2 (Slurry)	N/D	24.0
EP15	Cyclone #2 to UltraFines Recovery Unit 22 tph	N/D	22.0
Non-emission point	Cyclone #2 to Geo Tubes (Slurry)	N/D	2.0
EP16	Pit Road	2.52 VMT/hr	2.52 VMT/hr
EP17	Finished Product Customer Road	4.41 VMT/hr	4.41 VMT/hr
EP18	Off-Spec Customer Road	1.11 VMT/hr	1.11 VMT/hr
EP19a	Finished Product Wind Erosion	3.0 Acres	3.0 Acres
EP19b	Finished Product Vehicular Activity	0.85 VMT/hr	0.85 VMT/hr
EP19c	Finished Product Load Out	224.0	224.0
EP20a	Fines Load In via UltraFines Recovery Unit	22.0	22.0
EP20b	Off Spec/Fines Wind Erosion	2.0 Acres	2.0 Acres
EP20c	Off Spec/Fines Vehicular Activity	0.37 VMT/hr	0.37 VMT/hr
EP20d	Off Spec/Fines Load Out	49.0	49.0

Summit plans to mine sand bearing material and transport it by truck to their onsite processing plant. The mined material will be dropped into hoppers, transferred to conveyors and then conveyed to a grizzly feeder (EP4). From the grizzly feeder the material will be dropped into the primary jaw crusher (EP5). After the material is initially crushed it is then conveyed to a secondary horizontal shaft impact crusher (EP7) to be sized down to desired 20 mesh screen size or smaller. From the secondary crusher, the crushed material is conveyed to one of two wash screens. The MHDR of both crushers is 400 tons per hour however the two wash screens' combined MHDR is 275 tons per hour. The wash screens serve as a bottleneck to the process therefore they limit the production of the two crushers to 275 tons per hour each. The wash screens

are considered non-emission points due to the large amounts of water that is sprayed onto the crushed material as it is being screened. The wash screens reject any material that is greater than 20 mesh screen size and allow any material equal to or less than the 20 mesh screen size to continue on through the wet processing portion of the plant. It is estimated by the applicant that 27 tons per hour will be rejected by the wash screens with 248 tons per hour of properly sized material to continue to the wet processing portion of the plant. The reject material is conveyed from the wash screens to a radial stacker and sent to a stock pile.

The properly sized material is transferred as slurry from the wash screens to the fines material screw washer. The fines material screw washer is considered a non-emission point as the material slurry is approximately 70% water and 30% solids. The fines material screw washer separates the material using an auger flight that agitates the material in the water. The fine material suspended in the water flows over a weir to sump/pump #2 where it is then pumped to hydrocyclone #2. The transfer of the fines slurry from the fines material screw washer to sump/pump #2 and the transfer from sump/pump #2 to hydrocyclone #2 are also considered non-emission point as the majority of this material is water. It is estimated by the applicant that 8.0 tons per hour of fines will be sent to sump/pump #2 leaving 240 tons per hour to be carried up the auger flight. From the fines material screw washer the 240 tons per hour of properly sized material is transferred to the five cell attrition scrubber.

The five cell attrition scrubber is an enclosed unit with propellers that cleans and polishes the sand material particles by particle to particle contact. The material/water slurry flows through the cells with a six and a half minute residency time. Both the transfer of the material from the fines material screw washer to the five cell attrition scrubber and the five cell attrition scrubber itself are considered non-emission points as the material/water slurry at this point is approximately 30% water and 70% solids.

From the five cell attrition scrubber the now cleaned and polished material is transferred to the sump/pump #1 and is then pumped to hydrocyclone #1. These two transfer points are also considered non-emission points as the material being handled during these transfers is approximately 30% water and 70% solids. The hydrocyclone is used to separate the water and fines from the clean material. The water and fines collected by hydrocyclone #1 is sent to Sump/Pump #2 and then transferred to hydrocyclone #2. It is estimated by the applicant that fines collected will amount to 6.0 tons per hour. This leaves 234 tons per hour of remaining material which is transferred to the hydrosizer for additional sizing. The hydrosizer is a water bath that suspends any fines that were not collected by hydrocyclone #1. The fines and water bath mixture within the hydrosizer flows over a weir to sump/pump #2 and is then transferred to hydrocyclone #2. From the hydrosizer the remaining material is transferred to a dewatering screen. It is estimated by the applicant that 8.0 tons per hour of fines will be removed by the hydrosizer leaving 226 ton per hour that will be transferred to the dewatering screen. The transfer point between the hydrocyclone #1 and the hydrosizer and the transfer point between the hydrosizer and de watering screen are considered non-emission points as the material being handling during these transfers are approximately 30 to

40% water and 60-70% solids. The hydrosizer process is also considered a non-emission point due to fact that it is a water bath process.

The dewatering screen removes the water from the finished product. The total amount of material being processed by the dewatering screen will be 226 tons per hour. The water that is removed is sent to sump/pump #2 and then pumped to hydrocyclone #2. The fines contained within the water removed by the dewatering screen are expected to be approximately 2.0 tons per hour. This results in the final throughput of finished product coming out of the dewatering screen as 224 tons per hour. The dewatering screen is considered a non-emission point as this piece of equipment handles material that is approximately 30 to 40% water and 60-70% solids. Once the finished product has been processed through the dewatering screen it is conveyed to a radial stacker and then sent to a stockpile.

All the fines that are collected by fines material screw washer, the hydrocyclone #1, the hydrosizer, and de watering screen are transferred to sump/pump #2 and pumped to hydrocyclone #2. The hydrocyclone #2 removes the water and recovers most of the fines. The fines collected drop into the ultrafine recovery unit which then drops to a storage pile. Approximately 22.0 tons per hour of fines is expected to be collected by the ultra-fine recovery unit with 2.0 tons per hour of the fines remaining in the water. The water removed by the hydrocyclone is send to GEO tubes. The GEO tubes are used for water recovery and are used to filter out the fines remaining in the water.

There are no current plans to operate concurrently with other plants at this site. However this permit does allow for concurrent operation.

40 CFR 60 Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants*, applies to the equipment at this site. Any testing or monitoring requirements by the subpart mentioned above must be performed in order to show compliance.

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 Ste. Genevieve 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.

No permits have been issued to Summit Proppants, Inc. from the Air Pollution Control Program.

TABLES

The table below summarizes the emissions of this project. There are no existing actual emissions from this installation as this is a new facility. 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 4: Emissions Summary (tons per year)

Air Pollutant	De Minimis Level/SMAL	Existing Potential Emission	Existing Actual Emissions	Potential Emissions of the Application	^a Conditioned Potential Emissions of the Installation
PM	25.0	N/A	N/A	60.29	41.83
PM ₁₀	15.0	N/A	N/A	21.62	<15.00
PM _{2.5}	10.0	N/A	N/A	8.30	5.76
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
Total HAPs	25.0	N/A	N/A	N/A	N/A

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

^aThe Conditioned Potential Emissions of the Installation are based on an annual limit of less than 15.00 ton per year of PM₁₀. All other pollutants are proportionally reduced.

Table 5: Ambient Air Quality Impact Analysis

Pollutant	NAAQS (µg/m ³)	Averaging Time	^a Maximum Modeled Impact (µg/m ³)	Limited Impact (µg/m ³)	Background (µg/m ³)	^b Daily Limit (tons/day)
^c PM ₁₀ (same)	150.0	24-hour	49.13	N/A	20.0	N/A
^d PM ₁₀ (separate)	150.0	24-hour	N/A	49.13	100.87	N/A

^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 Summit Proppants, Inc.

^dOperation with other plants that are not owned by Summit Proppants, 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 sand-crushing, sand screening and sand transfer 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 sand is greater than or equal to 1.5% by weight.

All pieces of equipment and transfer points downstream of the transfer of material from conveyor to the wash screen (EP8) and leading up to the transfer of final product sand from the dewatering screen to a conveyor (EP12) and ultrafine recovery unit is considered the wet processing portion of plant with the exception of the material handling of the wash screen reject material (EP9, EP10 and EP11). The moisture content of the material within the wet processing portion of plant is estimated to be between 20 and 30 percent.

As stated previously in this permit 40 CFR 60 Subpart OOO, *Standards of Performance for Nonmetallic Mineral Processing Plants*, applies to the equipment at this site. However, within Subpart OOO, § 60.670 (2) states "The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in § 60.671)." § 60.671 defines "wet material processing operations" as:

- (1) Wet screening operations (as defined in this section) and subsequent screening operations, bucket elevators and belt conveyors in the production line that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line; or
- (2) Screening operations, bucket elevators and belt conveyors in the production line downstream of wet mining operations (as defined in this section) that process saturated materials (as defined in this section) up to the first crusher, grinding mill or storage bin in the production line.

§ 60.671 defines "wet screening operations" and "saturated material" as:

Wet screening operation means a screening operation at a nonmetallic mineral processing plant which removes unwanted material or which separates marketable fines from the product by a washing process which is designed and operated at all times such that the product is saturated with water.

Saturated material means, for purposes of this subpart, mineral material with sufficient surface moisture such that particulate matter emissions are not generated from processing of the material through screening operations, bucket elevators and belt conveyors. Material that is wetted solely by wet suppression systems is not considered to be “saturated” for purposes of this definition.

AP-42 Section 11.19.1 “Sand and Gravel Processing,” November 1995 states “Emissions from the production of sand and gravel consist primarily of PM and PM₁₀, which are emitted by many operations at sand and gravel processing plants, such as conveying, screening, crushing, and storing operations. Generally, these materials are wet or moist when handled, and process emissions are often negligible.” Also within Section 11.19.1 figure 11.19.1-2 lists the typical process flow diagram of a sand or gravel processing plant. Within the process flow diagram each process that is considered an emission point and each process that is not considered an emission point is labeled. A process that is listed as “Wet Processing” with subcategories listed as “Washing, wet classifying, scrubbing and desliming” is labeled as a non-emission point.

Based on the descriptions and definitions found in 40 CFR 60 Subpart OOO and AP-42 Section 11.19.1 it was determined for this project the equipment within the wet processing portion of Summit’s plant was considered to be “Wet Processing” and were deemed to be non-emission points of PM, PM₁₀ and PM_{2.5}. To confirm our determination of non-emission points Summit Proppants, Inc. is required to inspect these processes daily for any visible emissions. If any visible emissions are found to be present during the operation of these processes Summit Proppants, Inc. must implement a corrective action plan to eliminate the visible emission. If the corrective action plan does not eliminate the visible emissions being emitted from the source Summit Proppants, Inc. must apply for a new permit to account for these emissions.

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 sand is greater than or equal to 1.5% by weight. Emissions from wind erosion of storage piles were calculated using an equation found in the Western Regional Air Partnership Fugitive Dust Handbook, Chapter 9 (September 7, 2006). A silt content value of 2.6% was used in the wind erosion emission factor calculation.

AMBIENT AIR QUALITY IMPACT ANALYSIS

An ambient air quality impact analysis (AAQIA) was performed to determine the impact of the pollutants listed in Table 5. 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 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.

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 Summit Proppants, Inc. shall demonstrate compliance with the NAAQS.

- When no other plants are located at this site Summit Proppants, Inc. is not required calculate the daily impact of its plant at this site.
- When plants that are owned by Summit Proppants, Inc., which are referred to as same owner plants, are located at the site, Summit Proppants, Inc. must calculate the daily impact of each plant and limit the total impact of all plants to not exceed the NAAQS using Attachment A.
- When plants that are not owned by Summit Proppants, Inc., which are referred to as separate owner plants, are located at the site, Summit Proppants, Inc. must account for the impacts of these plants as a background concentration and add it to the total impact of all plants owned by Summit Proppants, Inc. that are operating at the site. This total is limited to not exceed the NAAQS. Summit Proppants, Inc. will limit the total impact of all plants they own and operate at the site to 49.13 µg/m³ when any plants they do not own are located at the site. Summit Proppants, Inc. is not permitted to operate with any plant that is not owned by Summit Proppants, Inc. that has a separate owner background greater than 80.87 µg/m³. During this scenario, Summit Proppants, Inc. shall use Attachment B to demonstrate compliance with the NAAQS.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of PM₁₀ are conditioned below the de minimis levels. Potential emissions of PM remain at minor source levels. PM_{2.5} is proportionately reduced and remains below the de minimis levels.

APPLICABLE REQUIREMENTS

Summit Proppants, 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. 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 required for this installation within 30 days of commencement of operations.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-6.165

SPECIFIC REQUIREMENTS

- 40 CFR 60 Subpart OOO, "Standards of Performance for Nonmetallic Mineral Processing Plants" applies to the equipment.
- 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.

Gerad Fox
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 April 29, 2013, received April 30, 2013, designating Summit Proppants, 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. Mark Rust
VP Operations
Summit Proppants, Inc.
6582 Beaver Dam Road
Cromwell, KY 42333

RE: New Source Review Permit - Project Number: 2013-05-003

Dear Mr. Rust:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your operating permit is necessary for continued compliance. The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Gerad Fox, at the department's Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp
New Source Review Unit Chief

SH:gfl

Enclosures

c: Southeast Regional Office
PAMS File: 2013-05-003

Permit Number: