



STATEMENT OF BASIS
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 BAQ Engineering Services Division

Company Name	Vulcan Construction Materials, LLC - Lexington Quarry	Permit Writer:	Mareesa Singleton
Permit Number:	1560-0205-CA	Date:	December 29, 2016

DATE APPLICATION RECEIVED: November 23, 2015

FACILITY DESCRIPTION: Crushed Stone Quarry and Processing Plant

PROJECT DESCRIPTION: New crushed stone processing plant capable of processing 1700 tons per hour. The facility will consist of crushers (primary, secondary, and two tertiary), screens, conveyors, a wash process, storage piles, truck hauling and loading, a 220 hp diesel dewatering pump and a 30 hp diesel water pump.

SOURCE TEST REQUIREMENTS All sources from IDs 01 through 03 are subject to an initial source test in accordance with 40 CFR 60.11 and 40 CFR 60.675.

SPECIAL CONDITIONS, MONITORING, LIMITS: During the development of the pit, the facility will operate a portable/temporary processing plant. Since the portable/temporary plant will have a maximum permitted capacity less than the final/permanent plant, the only the equipment for the final/permanent plant is listed in the construction permit. Although the specific equipment for the portable/temporary processing plant is not listed in the construction application, the portable/temporary processing plant is subject to all the applicable conditions of this construction permit as outlined in Condition C.9. Additionally, the facility conducted a worst case modeling based on the pump location during the portable/temporary processing plant and the processing equipment for the final/permanent plant.

EMISSIONS

FACILITY WIDE EMISSIONS		
Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
Quarry Operations Emissions		
PM	1326	113
PM ₁₀	478	40.3
PM _{2.5}	67.9	5.17
SO ₂	1.98	---
NO _x	1.58	---
CO	6.44	---
VOC	2.38	---
Xylene (HAP / TAP)	1.83 x 10 ⁻⁴	---
1, 3 Butadiene (HAP / TAP)	2.52 x 10 ⁻⁵	---
Formaldehyde (HAP / TAP)	7.60 x 10 ⁻⁴	---
Acetaldehyde (HAP / TAP)	4.94 x 10 ⁻⁴	---
Acrolein (HAP / TAP)	5.96 x 10 ⁻⁵	---
Benzene (HAP / TAP)	6.01 x 10 ⁻⁴	---
Toluene (HAP / TAP)	2.63 x 10 ⁻⁴	---
Highest HAP (Formaldehyde)	7.60 x 10 ⁻⁴	---
Total HAP	2.39 x 10 ⁻³	---
Fugitive Emissions (Roads and Stockpiles)		
PM	1429	135



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FACILITY WIDE EMISSIONS		
Pollutant	Uncontrolled Emissions	Controlled/Limited Emissions
	TPY	TPY
Quarry Operations Emissions		
PM ₁₀	391	38.0
PM _{2.5}	46.1	5.06
Quarry Operations + Fugitive Emissions		
PM	2755	248
PM ₁₀	869	78.3
PM _{2.5}	114	10.2
SO ₂	1.98	---
NO _x	1.58	---
CO	6.44	---
VOC	2.38	---
Xylene (HAP / TAP)	1.83 x 10 ⁻⁴	---
1, 3 Butadiene (HAP / TAP)	2.52 x 10 ⁻⁵	---
Formaldehyde (HAP / TAP)	7.60 x 10 ⁻⁴	---
Acetaldehyde (HAP / TAP)	4.94 x 10 ⁻⁴	---
Acrolein (HAP / TAP)	5.96 x 10 ⁻⁵	---
Benzene (HAP / TAP)	6.01 x 10 ⁻⁴	---
Toluene (HAP / TAP)	2.63 x 10 ⁻⁴	---
Single Greatest HAP (Formaldehyde)	7.60 x 10 ⁻⁴	---
Total HAP	2.39 x 10 ⁻³	---

OPERATING PERMIT STATUS: The facility will be issued a new conditional major operating permit. The facility is requesting federally enforceable limits of less than 100 TPY of PM₁₀ for Title V avoidance and less than 250 TPY of PM and PM₁₀ for PSD avoidance.

REGULATORY APPLICABILITY REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Section II.E - Synthetic Minor	This is a synthetic minor construction permit. The facility is requesting federally enforceable limits of less than 100 TPY for PM ₁₀ for Title V avoidance and less than 250 TPY of PM and PM ₁₀ for PSD avoidance. Since this facility is not one of the 28 source categories for PSD or Title V, fugitive emissions are not included in determining the potential to emit.
Standard No. 4	- Section VIII: From June 15, 1999 guidance, a process includes all process emission units and/or group of process units used to make a finished identifiable output. It was determined that this facility is one process defined as aggregate processing consisting



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Regulation	Comments/Periodic Monitoring Requirements				
	<p>of all of the equipment with a finished identifiable output of crushed stone. The allowable PM emission rate is 84.66 lb/hr.</p> <p>- Section IX: All sources are subject to 20% opacity</p> <p>- Section X: The facility is subject to this section for all non-enclosed operations.</p>				
Standard 5.2 - Control of Oxides of Nitrogen	<p>Any stationary internal combustion engines constructed after June 25, 2004 or any existing source that is removed from its presently permitted facility and moved to another permitted facility after June 25, 2004, except process equipment and commercial or industrial boilers that are transferred between facilities within the State under common ownership, is subject to the following emission limitations:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th style="text-align: center;">Source Type</th> <th style="text-align: center;">Control Technology and/or Emission Limit</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Internal Combustion Engines with a mechanical power output of 200 bHP or greater – Compression Ignition</td> <td style="text-align: center;">Timing Retard $\leq 4^\circ$ + Turbocharger with Intercooler or equivalent technology capable of achieving 490 ppmv @ 15% O₂ (7.64 gm/bhp-hr)</td> </tr> </tbody> </table> <p>Unless otherwise noted, all emission limits are based on monthly averages.</p> <p>In addition to the limitations above, all sources new and existing shall conduct maintenance in accordance with the manufacturer's specifications.</p>	Source Type	Control Technology and/or Emission Limit	Internal Combustion Engines with a mechanical power output of 200 bHP or greater – Compression Ignition	Timing Retard $\leq 4^\circ$ + Turbocharger with Intercooler or equivalent technology capable of achieving 490 ppmv @ 15% O ₂ (7.64 gm/bhp-hr)
Source Type	Control Technology and/or Emission Limit				
Internal Combustion Engines with a mechanical power output of 200 bHP or greater – Compression Ignition	Timing Retard $\leq 4^\circ$ + Turbocharger with Intercooler or equivalent technology capable of achieving 490 ppmv @ 15% O ₂ (7.64 gm/bhp-hr)				
Standard No. 7	The facility is requesting a PSD avoidance limit of less than 250 TPY of PM and PM ₁₀ .				
61-62.6	The fugitive PM (Dust) emissions are controlled in a manner that should not produce undesirable levels of PM (Dust) emissions by using wet suppression.				
40 CFR 60 and 61-62.60	- The facility is subject to Subparts A and OOO. The crushers, conveyors, screens, and bins from IDs 01-03 are subject to an initial source test in accordance with 40 CFR 60 Subpart OOO. They are also subject to emission limits, recordkeeping, and reporting as outlined in the Subpart.				
40 CFR 63 and 61-62.63	The stationary internal combustion engines are subject to Subpart ZZZZ.				



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MODELING REVIEW

Regulation	Comments/Periodic Monitoring Requirements
Standard No. 2	This facility has demonstrated compliance through modeling; see modeling summary May 20, 2016. The modeling was conducted with operating hours of 6 am to 8 pm, Monday through Saturday. The modeling could have passed for a longer operation, but the Lexington County Zoning Ordinance limits operation from 7 am to 7 pm Monday through Saturday, so modeling from 6 am to 8 pm covers that restriction with ample margin. However, since the ordinance is more restrictive, the facility is limited to operating Monday through Saturday between the hours of 7:00 a.m. and 7:00 p.m. in order to comply with this standard.
Standard No. 8 (state only)	TAPs from virgin fuel are exempt.

PUBLIC NOTICE

This construction permit will undergo a 30-day public notice period to establish synthetic minor limits in accordance with SC Regulation 61-62.1, Section II(N). This permit was placed in *The Lexington County Chronicle & The Dispatch News*, *The State Newspaper* and *The Twin-City News* on July 21, 2016. The comment period is open from July 21, 2016 to August 26, 2016 and is on the BAQ website during that comment period. Comments were received during the comment period.

ADDITIONAL PUBLIC PARTICIPATION

- BLWM and BAQ joint Public Meeting on August 8, 2016.
- BLWM and BAQ joint Public Hearing on August 23, 2016. All comments are addressed in the response to comments document.
- Statement of Basis Changes:
 1. Added 220 hp diesel de-watering pump and exempt 30 hP water pump to the Project Description.
 2. Updated with new agency logo
 3. Revised Standard 2 operating limit on operating from 6 am to 8 pm Monday through Saturday to 7 am to 7 pm Monday through Saturday in accordance with the more restrictive operating hours of the Lexington County Zoning Ordinance.
- Permit Changes:
 1. Updated with new agency logo
 2. Revised General Permit Condition K.2 with new standard language
 3. Revised Limitations, Monitoring and Reporting Conditions C.8 to reflect the more restrictive Lexington County Zoning Ordinance
 4. Revised the fugitive dust plan requirements

Compliance with non-enclosed operations and fugitive dust requirements shall be demonstrated by developing a facility-wide fugitive dust control plan for controlling fugitive emissions from process operations,



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truck traffic, storage piles, and any other areas within the permitted facility where fugitive dust emissions can be generated. The plan shall be developed and submitted to the Director of Engineering Services for approval 180 days prior to the start of operation. The owner/operator shall implement the plan within 30 days of approval and create a schedule for its periodic review and update. The plan shall be kept and maintained on-site with a record of revisions. The plan shall address and/or contain at a minimum the following:

1. Water Trucks / Dust Control Systems
 - a. Operation and maintenance checks of water trucks or an approved dust control system.
 - b. Operating scenarios for water truck or dust control system failures or inadequacies
 - c. Dates the water trucks or dust control system did not operate and the alternative(s) dust control method used.
2. Truck Traffic
 - a. Road speed limits
 - b. Vehicle loading, off-loading, transportation or dumping of material procedures
 - c. Spillage and residual materials clean-up procedures
 - d. Operation and maintenance checks of sprinklers
 - e. Signage with respect to SC Code of Laws Sections 56-5-4100 and 56-5-4110 (which requires haul trucks transporting aggregate from all quarries to prevent the escape of materials loaded onto the vehicles)
3. Storage Piles
 - a. Material stock piling procedures
4. Process Equipment
 - a. Operation and maintenance checks of all plant equipment and enclosures.
 - b. Spillage and residual materials clean-up procedures
 - c. Daily visual emission checks on each crusher, screen, conveyor and storage bin when it is in operation.
 - d. Written guidelines on how to handle opacity problems

The owner/operator shall develop logs or use other approved methods to comply with the requirements of the plan.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.