

**South Carolina Department of Health and Environmental Control
Bureau of Air Quality**

**Response to Comments
Public Notice #14-097-CM-C
Winnsboro Crushed Stone LLC Synthetic Minor Construction Permit
Winnsboro, Fairfield County, South Carolina
Permit No. 1000-0038-CA**

The following is the South Carolina Department of Health and Environmental Control (SC DHEC) Bureau of Air Quality's (Department) response to comments made and issues raised during the formal comment period held October 17 to December 4, 2014, and the public hearing held on November 20, 2014, regarding the draft synthetic minor construction permit for Winnsboro Crushed Stone LLC at Rockton Thruway and Highway 34 in Winnsboro, Fairfield County. The written comments received regarding the draft permit are available for viewing at the SC DHEC Columbia office located at 2600 Bull Street, Columbia, SC 29201, or on the SC DHEC webpage at <http://www.scdhec.gov/Environment/AirQuality/ConstructionPermits/PermittingDecisions/>. Hardcopies can also be requested by contacting our Freedom of Information Office at (803) 898-3882.

Air Pollution Impacts - Comments were received regarding air pollution impacts to air quality, health impacts to sensitive individuals, impacts to wildlife and other animals and impacts to vegetation (trees) from the proposed operation. The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to establish National Ambient Air Quality Standards (NAAQS) for six common pollutants ("criteria" pollutants) considered harmful to public health. There are two types of NAAQS: primary standards and secondary standards. Primary standards are set to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are set to protect public welfare, such as protection against decreased visibility, and damage to animals, crops, vegetation, and buildings. National ambient standards have been set for the pollutant of concern from this project, particulate matter. Particulate matter (PM) consists of particulate matter less than 10 micrometers in diameter (PM₁₀) and particulate matter less than 2.5 micrometers in diameter (PM_{2.5}). The EPA is also required to designate areas of the country as nonattainment when monitoring information shows pollutant concentrations exceed a set standard. There are no nonattainment areas in South Carolina for PM₁₀ or PM_{2.5}.

On a five year schedule (set by the Clean Air Act), the EPA reviews ambient standards, which includes a review of science and medical data. Based on that periodic review, standards may become more stringent. The primary annual PM_{2.5} standard was strengthened from 15 to 12 micrograms per cubic meter (µg/m³) in December 2012 to improve public health protection.

In accordance with South Carolina air quality regulations, "no permit to construct or modify a source will be issued if emissions interfere with attainment or maintenance of any state or federal standard." Winnsboro Crushed Stone LLC (facility) operations were evaluated to determine if the emissions would interfere with attainment of the NAAQS. An air quality analysis was

performed using an EPA-approved air dispersion computer model to simulate how the facility's maximum emissions will be dispersed into the atmosphere surrounding the proposed site. This simulation used official National Weather Service Meteorological data from the Columbia Metropolitan Airport that was processed and quality assured by Department staff meteorologists. This meteorological data was determined to be representative of the weather conditions that would be observed at the facility site, including those weather conditions that would produce the worse-case pollutant concentrations in the community surrounding the proposed site. The maximum facility PM₁₀ and PM_{2.5} concentrations, added to background (monitored) pollutant concentrations, were below the national standards. The EPA-approved model demonstrated compliance with the NAAQS without including trees or other vegetation as a buffer (a worse-case scenario).

Crystalline Silica- Comments were received regarding the adverse health effects from the facility's air pollutant emissions. Specifically, concern was expressed about exposure to crystalline silica, which is a component of granite dust. Silica is the most common element found in the earth's crust. (NJ State Department of Health, Division of Occupational & Environmental Health, 1989). Activities such as travelling on dry, dirt roads and wind blowing across dry or sandy areas expose people to low concentrations of silica every day. Silicosis is a disease associated with long term exposure to very high concentrations of silica in the workplace. Occupational regulations were developed to protect workers from exposure to silica above certain levels.

In 1996, the EPA evaluated the scientific information available on occupational exposure to silica, which included the medical histories of thousands of miners, as well as available information regarding ambient exposure to silica. They concluded that healthy individuals exposed to non-occupational silica concentrations are adequately protected by the NAAQS for particulate matter, which was 50 µg/m³ at that time.¹ Since then, the EPA has strengthened PM standards to be more protective of public health. Air dispersion modeling has shown the facility's PM₁₀ and PM_{2.5} concentrations are below those standards.

Six states (Texas, California, Vermont, New York, New Jersey, and Michigan) regulate crystalline silica emissions as air toxics. However, these states have not shown health impacts from these sources. The EPA has adopted a health benchmark level for crystalline silica; however, based on its evaluation of non-occupational exposure to silica, it has determined that regulating silica exposure using the existing PM standards is protective of public health. Therefore, the EPA has not set a NAAQS for silica nor included it on its list of Hazardous Air Pollutants. Like the overwhelming majority of states, SC DHEC regulations focus on control

¹ "...[A] thorough analysis of the most extensive occupational studies available, each of which examined the medical histories of thousands of miners, suggests that the cumulative risk of silicosis among these South Dakotan, Canadian, and 8-9 South African miners from exposures at or below 1 mg crystalline silica/m years is close to 0%. 3 Using a high estimate of 10% for the crystalline silica fraction in PM from U.S. metropolitan 10 areas, 1 mg crystalline silica/m years is the highest CSE expected from continuous lifetime exposure at or below the annual PM NAAQS of 50 µg/m³. Thus, current data suggest that, for healthy individuals not compromised by other respiratory ailments and for ambient environments expected to contain 10% or less crystalline silica fraction in PM₁₀, maintenance of the 50 µg/m³ annual NAAQS for PM should be adequate to protect against silicotic effects from ambient 10 crystalline silica exposures." (US Environmental Protection Agency, 1996)

measures in the permitting process and rely on the EPA's conclusion that regulating particulate emissions, a component of which is silica, is protective of public health.

Exposure to silica dust is an occupational concern. Both the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA) regulate occupational exposure to silica. While worker exposure limits are set to protect workers, measures used to reduce exposure for workers (for example, wet suppression) also reduce air emissions. Some of the permit requirements, like requiring dust from the crushing, screening and conveying process be controlled through wet suppression, reduce both workplace exposures and air emissions. The permit also requires fugitive dust emissions to be minimized through the use of wet suppression, water trucks, paving of roads and other measures.

Radon- A comment was received concerning radon emissions from operations at the facility. Radon is a radioactive gas. It comes from the natural decay of uranium that is found in nearly all soils. It typically moves up through the ground to the air above and into buildings through cracks and other holes in the foundation. Buildings trap radon inside, where it can build up and cause lung damage when inhaled. A method to reduce radon concentrations in buildings is to vent the gas to the ambient (outside) air, where it quickly disperses and dilutes. The EPA does not regulate radon as an ambient air pollutant; therefore it has not set a NAAQS for radon nor included it on its list of Hazardous Air Pollutants. Operations at a quarry are not expected to increase levels of radon in homes or other enclosed buildings located outside of the quarry's property. For more information about radon, please visit the SC DHEC radon site at <http://www.scdhec.gov/HomeAndEnvironment/YourHomeEnvironmentalandSafetyConcerns/Radon/RadonFacts/>.

Dust/Fugitive Particulate Matter Emissions – Comments were received regarding PM emissions, including fugitive PM emissions at the proposed facility. These comments included health impacts; use of automated wet suppression systems; dust on public and facility-owned roads; buffers; and requests for additional measures to control dust.

Particulate matter (PM) emissions from the operating equipment and the on-site roads are required to be controlled per air quality regulations. These regulations limit PM emissions, limit opacity (amount of light blocked by dust particles), and require the facility to take opacity readings. Air dispersion modeling demonstrated that PM pollutant concentrations did not exceed the NAAQS, which are protective of public health. For health impact information, please see the "Air Pollution Impacts" section above.

Using wet suppression to control PM emissions is required by the air permit. The crushed stone processing plant (crushers, screens, conveyor systems) is regulated under the federal EPA New Source Performance Standard for Nonmetallic Mineral Processing Plants, Subpart OOO as well as State standards. These regulations require the use of wet suppression and require maintenance, inspections and corrective action on that control equipment. The facility has stated that the wet suppression system on the crushed stone operating plant will be operated by the control room. When wet suppression systems are in use, the water spray valves will be activated prior to the initiation of operations. However, the operator will adjust the flow depending on process conditions. Water trucks (or other dust control measure) will be used to control fugitive road and

storage pile emissions.

The Department regulates fugitive PM emissions (dust) from the equipment, any non-enclosed operations (such as storage piles) and from roadways owned and/or controlled by the facility. However, the Department does not have the authority to regulate truck traffic on the public roads. Emissions from vehicles are regulated by the EPA under the authority of the Clean Air Act. The permit requires the facility's roadways to be paved and/or treated (such as the use of water sprays) to minimize dust. The facility must also develop and implement a comprehensive Fugitive Dust Control Plan (plan) to ensure fugitive dust emissions are minimized. The plan requires the facility to identify fugitive emission sources, detail what steps will be taken to minimize emissions, record any excessive dust events and take corrective action to mitigate emissions during any excess fugitive emission episode. This plan must be submitted to the Department for approval 90 days prior to start of operations. The plan shall address fugitive emissions from the crushed stone plant, truck traffic, storage piles and any other potential source of fugitive dust emissions.

Fugitive Dust Plan Modifications- A request was received to require all trucks entering and exiting the site to be tarped. According to SC Code of Laws Section 56-5-4100 and 56-5-4110, haul trucks transporting aggregate from all quarries are required to secure their load with a cover to prevent spillage. While it is the truck drivers' responsibility to comply with these regulations as they travel on public highways, the facility will post signs of these requirements in appropriate areas on the site. The fugitive dust plan condition has been modified to include this requirement. See Item 10 of permit Condition D.11 for more details.

A request was received to require that water used for wet suppression be silt-free and non-turbid. The facility has stated that clean or clarified water must be used on wet suppression equipment for proper operation of the screens. The fugitive dust plan condition has been modified to include this requirement. See Item 9 of permit Condition D.11 for more details.

A request was received to require paving of on-site roads. SC Regulation 61-62.5 Standard No. 4 states, "The owner/operator...shall maintain dust control of the premises and any roadway owned or controlled by the owner/operator by paving or other suitable measures." The facility has stated they plan to pave some roads with asphalt and some with crushed stone. While the regulation does not specify what measures a facility must take to minimize fugitive dust, the facility has agreed to add those specific plans to the permit. See Item 11 of permit Condition D.11 for more details.

Insufficient Information to make a Permit Decision – Comments were received stating that there was insufficient data to make a permit decision and that the facility had failed to demonstrate the mining operation would not be harmful to public health. The facility submitted information required to make a permit decision. The air emission estimates are based on the EPA's "Compilation of Air Pollution Emission Factors" AP-42 document. This estimation methodology is commonly used by all the South Carolina granite mines for estimating emissions. The facility's application included an air dispersion modeling analysis to show the project would

not interfere with attainment of ambient air quality standards, a regulatory review of the applicable state and federal standards and a demonstration that the facility would be able to meet these requirements. The permit details how the facility will demonstrate compliance with those requirements. The facility has submitted all the information required to assess whether air quality requirements would be met. After consideration and a complete review of the air permit application and supplemental information, applicable state and federal air quality regulations, comments and concerns made at the public hearing and all other comments received within the required time frame, the public hearing transcript, and all other pertinent information, the Department has determined it has sufficient information to make a permitting decision.

Permit Life – A request was made to limit the permit to 3-5 years. An air construction permit allows for construction and start of operation of the mine. The facility has 18 months to start construction; this deadline may be extended if needed. The facility must request an operating permit within 90 days of start of operation. The facility can continue to operate under the construction permit until an operating permit is issued. The construction permit contains all the requirements for the facility to operate in compliance with the state and federal air quality regulations. Should there be any compliance issues at the facility, the facility will be expected to correct these immediately and the facility may be taken through the enforcement process. Once the operating permit is issued, proposed changes at the facility will be reviewed to determine if a construction permit is necessary and the operating permit will be updated when regulatory requirements are amended or as necessary for other changes.

Limit Operating Hours - A comment was received requesting limits on the hours of operations to minimize impacts on quality of life. Air emissions were estimated as if the facility would be operating 24 hours per day, 365 days per year. Based on that emission review and review of applicable state and federal regulations, the facility has shown they can operate in compliance with the requirements without a restriction on operating hours. The Department's permit decision is based on the Department's technical review and the applicable air regulatory requirements in place at the time of the Department's review. Although there is no permit restriction on hours of operation, the facility has stated that there are no plans to operate during nighttime hours for the immediate future.

Equipment Identification – A request was made for a list of the operating equipment and a map of its location in the quarry. The crushing, screening, and loading operations for the quarry will be located near the south boundary of the facility property at a distance of about 2300 feet from US Highway 34. An aerial picture of the quarry property boundary and the proposed location of the processing operations equipment is attached to this document. The proposed location of the processing equipment is identified with red dots. A list of the equipment is located in the Equipment and Control Device section of the permit.

Equipment Malfunctions- A comment was received concerning how equipment malfunctions would be handled. The permit requires the wet suppression equipment to be operated at all times when emission sources controlled by it are in operation. The owner/operator may adjust and/or turn off the water sprays as necessary to accommodate weather conditions or elevated material moisture content. If the wet suppression system fails, a portable system can be used until the control equipment is operating properly. The permit requires routine inspections and corrective

action on improperly performing or malfunctioning control equipment. The facility has stated that if crushed stone plant operations equipment (conveyors, screens, etc.) malfunctions, it will either be repaired or replaced. If a piece of equipment is no longer needed, it will either be sold or stored for parts.

Air Pollution from Vehicles and Machinery – A concern was expressed about emissions from the machinery (crushed stone plant operation) and vehicles. An air permit addresses and limits emissions from stationary sources (fixed plants); it does not include tailpipe emissions from mobile sources. Motor vehicles and engines are regulated by the EPA under the Clean Air Act, Title II-Emission Standards for Moving Sources. The vehicle traffic will also produce PM, PM₁₀, and PM_{2.5} (fugitive dust) from the roads. The permit requires fugitive emissions to be minimized through wet suppression, paving or other appropriate measures.

Wind Direction- A comment was received concerning the wind direction and a comment was received stating there had been a request for wind rose information. Wind rose information for the National Weather Service Columbia Metropolitan Airport and Fairfield County airport was delivered to the requester by hand. An air quality analysis was performed using an EPA-approved air dispersion computer model to simulate how the facility's maximum emissions will be dispersed into the atmosphere surrounding the proposed site. This model used official National Weather Service Meteorological data from the Columbia Metropolitan Airport that was processed and quality assured by Department staff meteorologists. This meteorological data was determined to be representative of the weather conditions that would be observed at the facility site, including those weather conditions that would produce the worse-case pollutant concentrations in the community surrounding the proposed site. The maximum facility PM₁₀ and PM_{2.5} concentrations, added to background (monitored) pollutant concentrations, were below the national standards.

Requests for Air Dispersion Modeling Information - A request for information regarding the PM modeling was received. The air quality analysis presentation from the Question and Answer Period (held before the public hearing) was sent directly to the requester via email. Air dispersion modeling results demonstrated that the ambient air quality standards would not be exceeded.

Inspection Reports- A comment was received requesting that site inspections be made available to the public. The Bureau of Air Quality has regional personnel located throughout the state that will periodically make unannounced, comprehensive inspections of the facility. They will also document and investigate any complaints made by the citizens. Fairfield County's local environmental office is the Midlands EQC Columbia at State Park Health Center, 8500 Farrow Road Bldg. 12 in Columbia, SC. The public can request the information through a Freedom of Information (FOI) request. The South Carolina Freedom of Information Act entitles anyone to request inspections and/or copies of documents in the Department's possession, unless an exemption applies. Within fifteen working days of receipt of a written FOI request, the Department must, in accordance with Section 30-4-30(c), make a determination in writing to the requestor regarding the release of the requested records. If the records are available, the requestor will be notified and instructed to contact the FOI Center to schedule a time and place where the records may be inspected or copied and will be advised of any charges that apply. The FOIA

office can be reached at 803.898.3882.

Requests for Inspection Information – A request for information regarding inspection reports from other quarries was received. Information on historical quarry inspections was discussed at the Question and Answer period before the public hearing. The presentation was sent via email to the requestor. Since 2005, SC DHEC has conducted over 100 inspections at approximately 30 operating quarries in South Carolina, and has had less than 20 inspections with violations in that time. More than half of those violations were due to inadequate recordkeeping. Two inspections found improper operation of wet suppression systems.

Historical Mining Operations – Comments were received regarding historical mining operations. The Anderson mine and Henry Knob mine near Clover were operating prior to federal air regulations and have been inactive since the 1970s. The Henry Knob mine was a kyanite process, which is not a granite quarry. The Rion mine does not have an air permit. While the Kennecott Ridgeway gold mine is closed, it did hold a Title V operating permit. The permit contained all applicable requirements, including a fugitive dust control plan. Ambient PM₁₀ monitoring conducted at the site showed that the national standard was not exceeded. New mines that apply for permits or mines with existing active operations must demonstrate compliance with current applicable federal and state air quality regulations. The air quality regulations are designed to be protective of public health and welfare. All facilities are expected to comply with any permit requirements, including emission limits, testing, monitoring, and recordkeeping requirements.

Monitoring Studies- A request for information regarding historical monitoring data from other quarries was received. A summary of that information was sent directly to the requester via email. Ambient monitoring for PM₁₀ was conducted at quarries in South Carolina. The monitoring was conducted between 2002 and 2008. This monitoring data showed that ambient air quality standards were met. Additionally, SC DHEC conducted ambient PM₁₀ monitoring near two facilities in Columbia, SC due to concerns about PM₁₀ concentrations in communities adjacent to rock quarries. The monitoring was conducted at one site from 1991 to 2012 and from 1991 to 2010 at the other site. The results of that monitoring showed that ambient standards were not exceeded.

Ambient PM Monitor – A question was asked if the permit would require a PM ambient monitor for the facility site. The EPA has determined a minimum number of monitoring sites that must be established and maintained for each pollutant. The Department annually reviews the monitoring network to make sure the minimum requirements and the needs of the air program are met. Based on air dispersion modeling showing compliance with the PM standards, permit requirements to control PM emissions, and historical information indicating compliance with the PM ambient standards at other mining sites, there is no requirement for an ambient PM monitor at this site.

Winnsboro Crushed Stone LLC Administration – The Department was asked to identify the facility's home office and executives. SC Regulation 61-62.1 Section II (C) lists the required information for a construction permit application, including "...the facility name; and the name, mailing address, and telephone number of the owner or operator for the facility; the location of

the facility including its street address and the name, mailing address, and telephone number of the facility's contact person..." The Department does not require facilities to provide a home office address or a list of executives. The construction permit application (revised November 14, 2014) identifies the physical address as Rockton Thruway and Hwy 34 Winnsboro Mills, SC 29180. The air permit facility contact and owner/operator is identified as Mr. David C. Boggs, Owner & Member-Manager Boggs Materials, Inc. Boggs Materials, Inc. and Member-Manager of Winnsboro Crushed Stone, LLC. The mailing address for Mr. Boggs is PO Box 1609 Monroe, NC 28111.

Truck Traffic – Comments were received regarding the impacts from increased truck traffic, including the safety concerns for existing roads and bridges due to the increased volume of truck traffic. The Department regulates the fugitive dust from roads within the facility; however, the Department does not have the authority to regulate truck traffic on the public roads. Emissions from mobile sources are regulated by the EPA under the authority of the Clean Air Act. The facility has stated they will work with the proper state and county agencies, as appropriate, to ensure that trucks shipping materials meet the required standards.

Proximity to Residences and Land Value – Comments were received concerning the location of the facility relative to residential areas and personal property. All zoning decisions are made at the local level by a city or county zoning authority, usually before a permit request is submitted to the Department. The Department cannot dictate where a facility locates or factor property value impacts into permitting decisions. Please contact your local city or county council representatives for more information on how to get involved in local zoning and planning issues.

Background Noise Levels – A comment was received requesting that background noise levels be monitored and noise impacts minimized. The Department does not have any noise standards in the air quality regulations and therefore no authority to regulate or base a permit decision on noise levels. However, excessive noise levels not usual for a site should be reported to the SC DHEC regional office. This could be an indication that equipment is not operating properly. Although noise is not addressed in the permit, the facility has provided that on the 932.2 acre property the actual process footprint will reside on approximately 370.2 acres and the center line of the process area to the nearest resident is approximately 2000 feet. They stated the undisturbed 405.6 acres should help reduce any noise from the plant. Fairfield County does address noise levels in the Fairfield County Land Management Ordinance. Please contact the Fairfield County offices for further information.

Lighting - A comment was received concerning light pollution and the proximity to residents. The Department has no regulations regarding lighting and therefore no authority to regulate or base a permit decision on the amount of lighting. Although lighting is not addressed by the air permit, the facility has stated there are no plans to operate during nighttime hours for the immediate future. However, should the need arise for nighttime activity, it would use localized lighting stations that would greatly limit the output of extraneous light. The facility believes there is sufficient buffer to further minimize such extraneous light should nighttime activity become necessary.

Quality of Life - Comments were received regarding impact on the quality of life for residents in the surrounding areas. A community's quality of life can be impacted both positively and

negatively by a variety of factors. The Department cannot base its permit decision on these factors; the Department's permit decision is based on the Department's technical review and the applicable air regulatory requirements in place at the time of the Department's review. These air quality requirements are protective of public health and welfare.

Endangered Species, Displacement of Wildlife – In order to receive an air quality permit, the facility must demonstrate that they are in compliance with air quality standards set by the EPA. Secondary ambient air quality standards are protective of wildlife. For more information, please see the “Air Pollution Impacts” section above.

Health and Environmental Impacts to Water – Comments were received with respect to the impact this facility may have on wells/drinking water, groundwater and water runoff. The Bureau of Air Quality has the authority to review the air quality impacts of air pollutants as specified in our state and federal air quality regulations. The Department does not have any water standards in the air quality regulations and therefore no authority to regulate or base a permit decision on those concerns. The facility is required to have a National Pollutant Discharge Elimination System (*NPDES*) *General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities* that regulates the discharge of stormwater and process water from the mine site. SC DHEC's Bureau of Water (BOW) is currently reviewing the NPDES permit application. The facility is also required to have a Mining Permit that addresses the potential for groundwater related impacts from dewatering activities. SC DHEC's Bureau of Land and Waste Management (BLWM) is currently reviewing the mine permit application.

Blasting- Comments were received with respect to blasting activities. The air permit does not cover blasting activities. Blasting activities at a granite quarry are regulated by the South Carolina Mining Act. SC DHEC's BLWM is currently reviewing the mine permit application.

Request for an Additional Public Hearing and to Delay Permit Issuance – A comment was received requesting an additional public hearing to answer questions concerning the health impacts of particulate matter, hours of operation, impacts of truck traffic and water supply. The Department did not hold another public hearing for the draft permit. Consistent with S.C. Regulation 61-62.1 the Department provided for adequate notice and review to the public of the draft air permit and notice of the public hearing. On October 17, 2014, the Department provided public notice of the draft air permit and the public hearing. This public notice was published in *The Herald-Independent* and *The Independent Voice* newspapers and was also available on the SC DHEC website. The public hearing was held November 20, 2014, and the public comment period closed on December 4, 2014. Public participation is a critical part of the permit process. As such, the Department took additional measures to help the community understand the project and answer questions. These measures were holding a Question & Answer session prior to the public hearing session on November 20, 2014, and meeting with citizens on several occasions between May and November, 2014. The Department may not hold a permit application indefinitely when a facility has submitted all the required information and the Department has reviewed such information and complied with the regulatory requirements for public participation. In accordance with Section 48-1-100(A) of South Carolina Pollution Control Act, the Department must issue a permit if an applicant submits an application that meets all applicable Department standards.

General Opposition and Support- SC DHEC received several general comments requesting denial of the permit. The Department appreciates all comments made regarding Winnsboro Crushed Stone LLC. However, the Department cannot make permitting decisions based on community approval or disapproval of the company/facility. The Department's decision is based on the Department's technical review of an application and the regulatory requirements in place at the time of the Department's review.

Figure 1 -- Winnsboro Quarry Equipment Location

