

South Carolina Department of Health and Environmental Control
Bureau of Air Quality
Response to Comments
Public Notice # #21-040-GCM-C-M-H
Luck Stone – Fairfield I-77 Development (1000-0047-CA)

The following is the SC Department of Health and Environmental Control's (DHEC) Bureau of Air Quality (Department) response to the comments made and issues raised during the formal comment period held July 01, 2021 through August 20, 2021 and the public hearing regarding the draft Luck Stone – Fairfield I-77 Development synthetic minor air quality construction permit. Written comments were received during the comment period for the draft air quality permit.¹ The public hearing transcript and 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 <http://www.scdhec.gov/Environment/AirQuality/PermittingDecisions/> or hardcopies can be requested by contacting our Freedom of Information Office at (803) 898-3817.

Air Pollution Impacts - Comments were received inquiring about what air studies had been performed and expressing concern about air pollution impacts to air quality and health impacts to the general population and sensitive individuals (such as asthmatics and others with lung diseases), as well as impacts to nearby homes, places of business, and plant life and livestock.

Department Response

Federal and state air quality regulations are established to be protective of public health, using scientific data and human health risk exposure assessments. These regulations include setting standards for ambient air quality and setting emission limits, controls and/or operational requirements for industrial facilities.

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 and the environment. There are two types of NAAQS: primary standards and secondary standards. Primary

¹ Written comments associated with Luck Stone Fairfield I-77 Development's application for a mine permit from SC DHEC's Bureau of Land and Waste Management (BLWM) are addressed in BLWM's separate response to comments for the mine permit. To the extent those comments reference concern about air quality, those concerns are also addressed by this response to comments. The Bureau of Air Quality's acknowledgment of and general response to concerns raised in the BLWM permitting process should not be construed as any representation or warranty regarding those comments' applicability to this air permit decision or the availability of further review.

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. The criteria pollutant of concern from this project is particulate matter (PM). PM consists of any finely divided solid or liquid material, other than uncombined water, and includes particulate matter less than 10 micrometers in diameter (PM₁₀) and particulate matter less than 2.5 micrometers in diameter (PM_{2.5}). National ambient standards have been set for both PM₁₀ and PM_{2.5}.

The EPA is also required to designate areas of the country as nonattainment when monitoring information shows pollutant concentrations exceed (or violate) a set standard. There are no nonattainment areas in South Carolina for PM₁₀ or PM_{2.5}.

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." Luck Stone – Fairfield I-77 Development (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 National Weather Service Station 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 worst-case pollutant concentrations in the community surrounding the proposed site. The maximum facility PM₁₀ concentration from the computer model was added to background (monitored) pollutant concentrations. The EPA-approved model demonstrated compliance with the NAAQS for PM₁₀ without including trees or other vegetation as a buffer (a worst-case scenario). Air dispersion modeling for PM_{2.5} was not conducted because controlled emissions of PM_{2.5} were shown to be below threshold levels requiring an air quality analysis. Since emissions of PM_{2.5} were shown to be below the de minimis threshold level, operations at the proposed Fairfield Quarry are not expected to cause or contribute to a violation of the national ambient quality standards for PM_{2.5}.

Crystalline Silica and Related Lung Diseases - Comments expressed concern about exposure to crystalline silica, which is a component of granite dust, and risk of silicosis and pulmonary fibrosis.

Department Response

Crystalline silica is found abundantly in the earth's crust and is a component of granite, sand, soil, and other minerals. Several daily activities such as travelling on dry-dirt roads and wind blowing across dry or sandy areas expose people to low concentrations of silica.

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 $50 \mu\text{g}/\text{m}^3$ at that time.² Since then, the EPA has strengthened PM standards to be more protective of public health and the environment. Air dispersion modeling has shown the facility's PM_{10} concentration is below the current NAAQS standard. Air dispersion modeling for $\text{PM}_{2.5}$ was not conducted because the controlled emissions of $\text{PM}_{2.5}$ for the facility are below threshold levels requiring an air quality analysis.

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 (HAP). As with the majority of states, SC DHEC regulations focus on control 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 largely an occupational concern. Both the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health

² "...[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%. 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 $50 \mu\text{g}/\text{m}^3$. 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 PM_{10} , maintenance of the $50 \mu\text{g}/\text{m}^3$ annual NAAQS for PM should be adequate to protect against silicotic effects from ambient 10 crystalline silica exposures." (US Environmental Protection Agency, 1996)

Administration (MSHA) regulate occupational exposure to silica. Silica is recognized as a carcinogen and 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. While worker exposure limits are set to protect workers, measures used to reduce exposure for workers (for example, wet suppression) also reduce air emissions and off-site impacts. Some of the permit requirements, like requiring dust from the crushing, screening and conveying processes to 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.

Dust/Fugitive Particulate Matter Emissions – Comments were received regarding particulate matter (PM emissions), including fugitive PM emissions at the proposed facility. These comments inquired about health impacts, dust on public and facility owned roads, permitting and controls for fugitive dust, and oversight of activities related to dust control and prevention.

Department Response

An air quality construction permit is required for the construction of the proposed facility, and the permit includes conditions and controls for fugitive dust and PM emissions. A draft air quality permit went on public notice on July 1, 2021 and received public comments through August 20, 2021.

Particulate matter (PM) emissions from the operating equipment and the on-site roads are required to be controlled in accordance with air quality regulations. These regulations limit PM emissions and opacity (amount of light blocked by dust particles). Air dispersion modeling and emissions evaluation demonstrated that PM pollutant concentrations would not exceed the NAAQS, which are protective of public health and the environment. For health impact information, please see the *Air Pollution Impacts* section.

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, 40 CFR Part 60, Subpart OOO, as well as State standards. These regulations and the permit require the use of wet suppression and require maintenance, inspections and, if necessary, corrective action on that control equipment. Water trucks (or other dust control measure) will be used to control

fugitive road and storage pile emissions. When dust suppression is conducted in accordance with the permit, it should be effective in controlling dust emissions.

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 180 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. For further information on dust plan requirements, please see the *Request for Dust Monitoring and Mitigation Plan* section.

The air construction permit requires the facility to conduct weekly inspections on the wet suppression related equipment to ensure they are operating properly. This data is required to be recorded in a logbook. During the Department's unannounced air inspections, the inspectors review all required records, observe the facility's processes while in operation, make visual emission observations, verify that the equipment onsite matches those listed in the current permit, and review any other pertinent information. Aside from unannounced inspections, inspections will also occur on a complaint-driven basis. Any alleged violations are detailed in the inspection report and referred to the Department's Enforcement Section.

Additional Sources of Dust and Fugitive Dust and Their Calculations – Concern was expressed about emissions associated with blasting and other sources of a fugitive dust. In addition, a comment received by BLWM sought consideration of other sources of fugitive dust outside of the activities associated with the processing plant at the quarry, specifically referencing activities such as drilling, blasting, loading, hauling, crushing, and conveyance of crushed materials.

Department Response

Various permit conditions and regulatory requirements specifically address control of emissions from material handling activities such as loading, hauling, crushing, and conveyance of crushed materials. Please see the sections on *Dust/Fugitive Particulate Matter Emissions* and *Request for Dust Monitoring and Mitigation Plan* for additional discussion of these requirements.

Emissions for drilling and processing plant activities such as loading, crushing, and conveying were estimated using emission factors and engineering judgment based on Section 11.19.2, Table 2 of the EPA-developed document, *AP-42: Compilation of Air Emission Factors* (AP-42). Consistent with other mining operations, for instances where emission factors for PM, PM₁₀, and/or PM_{2.5} were directly unavailable in Table 2, conservative estimates and engineering judgment were used to determine a representative factor. Specifically:

- Emission factors for primary and secondary crushing are unavailable in Table 2 and were conservatively assumed to be equal to those of “tertiary crushing”, which crushes material into smaller sizes than that of primary crushing and therefore produces more particulate emissions.
- In cases where the PM emission factor was unavailable and only a PM₁₀ emission factor was provided in Table 2 (e.g. truck loading and drilling), the PM emission factor was conservatively estimated to be three times the amount of PM₁₀.
- In cases where the PM_{2.5} emission factor was missing and only an emission factor for PM₁₀ was provided (e.g. truck loading, drilling, and primary/secondary crushing (whose emissions were estimated using the tertiary crushing emission factor as detailed above)), the PM₁₀ factor was used with the particle size multiplier contained in AP-42 section 13.2.4 for Aggregate Handling and Storage Piles to determine a representative PM_{2.5} emission factor for these sources.

Section 11.19.2 of AP-42 covers crushed stone processing and does not include emission factors for blasting. AP-42 Section 11.9 covers Western Surface Coal Mining and contains blasting emission factors for that type of operation. However, Section 11.19.2 states that “the procedure should not be applied to stone quarries because of dissimilarities in blasting techniques, material blasted, and size of the blast areas.”

Additionally, blasting is typically done while primary crushing and hauling are not in operation. The blast area must be cleared before the blast and cannot resume until the blasting contractors have inspected the blast area and determined the area safe to re-enter. This operational shutdown typically lasts approximately 30 minutes while the actual blast occurs in less than one minute. The emissions created from blasting are offset by the cessation of emissions from primary crushing and hauling during

that blasting period. For additional information related to blasting impacts, please see the *Blasting* section below.

Fugitive dust emissions were also estimated for the storage piles and truck/customer roads (which include vehicle movement on these roads) using EPA's *Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures* and AP-42's Section 13.2.2 (Unpaved Roads) document, respectively. Information required to determine these estimations are from site-specific meteorological information, information provided by knowledgeable Luck Stone staff, the aforementioned particle size multiplier, and other AP-42 sections.

Because the facility is not a Title V or Prevention of Significant Deterioration (PSD) major source (discussed in *Facility's Minor Source Status* section), fugitive emissions are not required to be included in the emissions summary, but these fugitive emissions are nonetheless included in the facility's calculation assessment.

For full detail of the emissions calculations, please refer to the *Emission Assumptions and Calculations I, Aggregate Mine and Processing* section of the air construction permit application.

Portable Generator – A comment received by BLWM noted the portable generator on-site and discussed whether the generator would be subject to air permit requirements.

Department Response

The proposed 550 kW portable diesel-fired engine is exempt from requirements for a construction permit based on Section B.2.ii.a of the *Bureau of Air Quality Permitting Exemption List* (October 23, 2020), which exempts the following equipment from construction permitting:

“ii. Temporary or portable engines that meet the definition of “non-road engine” below. However, processes powered by the internal combustion engine shall be evaluated for permitting applicability.

- a. Portable or transportable, meaning designed to be capable of being carried or moved from one location to another and does not remain at a location for more than 12 consecutive months. A location is a single site at a building, structure, facility, or installation. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar

function as the engine replaced will be included in calculated the consecutive time period.”

The proposed portable generator will be moved around to various sites at the facility as-needed for less than 12 consecutive months. Although the generator is considered exempt from requiring an air construction permit due to the above exemption, it is still required to comply with any applicable state or federal regulations, such as the opacity limitations detailed in Section IX of Standard 4.

Although not subject to permitting, the facility provided emissions calculations for the engine upon request from the Department. These emissions have been reviewed and included in the emissions summary for the project.

Facility’s Minor Source Status – A comment was received by BLWM asserting that the facility should be considered a Prevention of Significant Deterioration (PSD) source and subject to PSD review due to the uncontrolled emissions for PM being above PSD major thresholds (250.0 tons per year or more).

Department Response

Although the facility does have uncontrolled emissions rates for PM and PM₁₀ above Title V and PSD thresholds, the facility has requested a synthetic minor construction permit that requires operation of a control device (in this case, wet suppression via spray bars and water trucks) and includes federally enforceable limits to constrain potential to emit to levels below the PSD and Title V major source thresholds. The facility’s controlled emissions calculations based on use of control equipment have been reviewed and, in combination with the federally enforceable limits, adequately demonstrate potential to emit below major source thresholds.

To ensure compliance with the federally enforceable limits, the air construction permit requires the facility to conduct weekly inspections on the wet suppression related equipment to ensure they are operating properly. This data is required to be recorded in a logbook. During the Department’s unannounced air inspections, the inspectors review all required records, observe the facility’s processes while in operation, make visual emission observations, verify that the equipment onsite matches those listed in the current permit, and review any other pertinent information. Aside from unannounced inspections, inspections will also occur on a complaint-driven basis. Any alleged violations are detailed in the inspection report and referred to the Department’s Enforcement Section.

Concern of Respiratory Health of Quarry Employees – A comment was received regarding respiratory health concerns of Luck Stone employees on-site, including the personal protection equipment (PPE) required and how compliant they will be in hot temperatures.

Department Response

EPA and Department air quality regulations address ambient air quality concerns. As noted above, both the Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA) generally regulate occupational exposure concerns. In an e-mail dated September 9, 2021, the Department relayed the comment to Mr. Mark Williams with Luck Stone. On September 14, 2021, Mr. Williams provided the following response:

Luck Stone takes great pride in its occupational safety and health program, and is recognized as an industry leader. Dust exposure, particularly concerning silica, was a traditional health hazard associated with rock quarrying before the modern crushing plants were developed in the 1970's. Modern dust control technologies have advanced such that overexposures to dust or silica in our workforce today is non-existent. Luck Stone maintains a full occupational health program to ensure that our workers are not being exposed to harmful levels of dust. Testing and health monitoring show that the associates are not exposed to harmful dust levels, and are not required to wear masks or respirators.

Request for a Dust Monitoring and Mitigation Plan – Comments on the air permit (and comments to BLWM) were received requesting that the Department require a dust monitoring and mitigation plan that includes the installation of air monitors, the identification, classification, and/or characterization of fugitive dust and fugitive dust emission sources, best management practices plan development and implementation, and training and inspection/maintenance.

Department Response

The permit application and calculation methodology identifies each expected dust source (including fugitive dust) and characterizes emissions by particulate size (i.e. PM, PM₁₀, PM_{2.5}). For more information, please see the *Additional Sources of Dust and Fugitive Dust* section. Specific particulate matter and fugitive dust-related permit conditions identify the relevant emission units and specify requirements for the control of fugitive dust.

Condition C.7 of the synthetic minor air construction permit requires the facility to develop and implement a “facility-wide fugitive dust control plan for controlling fugitive emissions from process operations, truck traffic, storage piles, and any other areas within the permitted facility where fugitive dust emissions can be generated.” This site-specific plan is to be submitted to the Department and reviewed to ensure satisfactory controls for fugitive emissions are in place.

The entirety of the condition regarding the facility-wide dust control plan is as follows:

(S.C. Regulation 61-62.6) Fugitive particulate matter (PM) emissions from material handling, process equipment, control equipment, or storage piles will be minimized to the maximum extent possible. This will include proper maintenance of the control system such as scheduled inspections, replacement of damaged or worn parts, etc. Fugitive emissions from dust buildup will be controlled by proper housekeeping and/or wet suppression.

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, 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 Air Permitting 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
 - a. Weekly operation and maintenance checks of water trucks
 - b. Operating scenarios for water truck failures or inadequacies
 - c. Dates the water trucks 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. Weekly 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. Weekly operation and maintenance checks of all plant equipment and enclosures
 - b. Spillage and residual materials clean-up procedures
 - c. 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.

Additionally, requirements of the facility's wet suppression system and required recordkeeping, facility inspections, and corrective actions are detailed in Condition C.8 of the permit:

The owner/operator shall operate its wet suppression system except as necessary for elevated material moisture content (i.e. rainfall).

In case the wet suppression system is not operating properly, then a portable water spray system is acceptable for use until the permanent water spray system is back in proper operation. If a portable water system is not available, then the process shall be shut down until the permanent water spray system is back in proper operation.

The owner/operator shall perform weekly inspections of all wet suppression related equipment including a check that water is flowing to discharge spray nozzles in the wet suppression system. The owner/operator must initiate corrective action within 24 hours and complete corrective action as expediently as practical if the owner/operator finds that water is not flowing properly during an inspection of the water spray nozzles. The owner/operator must record

each inspection of the water spray nozzles, including the date of each inspection and any corrective actions taken in the logbook. The weekly inspections required in this condition meets the requirements of monthly inspections in 40 CFR 60.674(b).

Regarding the request for the installation of air monitors nearby and/or on-site, please see the *Air Quality Monitoring* section.

Air Quality Monitoring – Comments were received requesting the installation of nearby and/or on-site air quality monitors, noting a lack of DHEC monitoring stations (statewide and nearby), seeking monitoring and reporting of air quality to nearby property owners on a regular basis, and inquiring about the process by which DHEC samples or monitors pollutants with respect to public health. One commenter objected to model assumptions absent the installation of monitors and development of a track record with regard to NAAQS compliance.

Department Response

Consistent with federal regulations, the Department relies on its stationary network of ambient air monitors to continuously monitor air quality throughout the state and determine compliance with the NAAQS and state ambient air quality standards. Monitoring stations in South Carolina's ambient air monitoring network are specifically located to represent ambient pollution levels in a diverse set of geographical areas. In accordance with 40 Code of Federal Regulations (CFR) Part 58, Appendix D, ambient air monitors are required to be placed in areas with the highest population, or where the highest pollutant concentrations are expected to occur. The Department annually reviews the monitoring network to make sure the minimum requirements and the needs of the air program are met. If the ambient monitors in the monitoring network demonstrate the air pollutant concentrations to be lower than the primary standards, which are set by the EPA to provide public health protection, then it is reasonable to expect that the air pollutant concentrations in the surrounding areas are also lower than the national standards. The Department has operated an air quality monitoring network in South Carolina since 1959. The monitoring network currently includes 24 PM_{2.5} monitors and samplers and 4 PM₁₀ monitors and samplers at 14 sites across the state. All monitors in South Carolina show attainment with all current air quality standards.

The nearest PM₁₀ ambient air monitor to the proposed site is located approximately 25 miles southwest in Cayce, SC at the Cayce City Hall monitoring site. The nearest PM_{2.5} ambient air monitor is located less than 16 miles southeast in Columbia, SC at

the Parklane monitoring site. These monitors represent the highest expected concentrations and population exposure in the area that includes all of Calhoun, Fairfield, Kershaw, Lexington, Richland, and Saluda Counties. Data from these monitors show that Fairfield County, including the proposed construction area, remains in attainment for both PM₁₀ and PM_{2.5} ambient air quality standards. The Department's air monitoring data is on EPA's website at <https://www.epa.gov/outdoor-air-quality-data>. Other publicly-available web-based applications, such as AirNow (www.airnow.gov), also provide near real-time air quality information.

There is also historical PM₁₀ monitoring data available for granite quarries. This monitoring was conducted by a contractor for a Columbia area quarry between 2003 and 2008. SC DHEC technical staff periodically checked performance and accuracy of the monitors. This monitoring data showed that ambient air quality standards were met. The maximum permitted production rate at the proposed Luck Stone quarry is less than at the Columbia area quarry. Additionally, SC DHEC conducted ambient PM₁₀ monitoring near two granite quarries in Columbia due to concerns about PM₁₀ concentrations in adjacent communities. 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 ambient concentrations less than half of the health-based standards for PM₁₀ in the area around both quarries at the time the monitoring was discontinued.

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, facility operations are not expected to cause or contribute to a violation of State or Federal ambient air quality requirements.

Requirements under federal and state regulations do not include the installation of portable ambient air monitors or reporting of such monitoring data to the public, and such monitoring data cannot be used to demonstrate compliance with permit limits or the NAAQS. However, nearby property owners or others may visit the Department's website for further information on the Department's ambient air monitoring.³ In addition, as discussed above, the facility must conduct daily visual inspections and maintain various records and logs to demonstrate that the facility is being operated as stated in the permit. During the Department's unannounced air

³ www.scdhec.gov/environment/your-air/ambient-air-monitoring-network

inspections, inspectors review all required records, observe the facility's processes while in operation, make visual emission observations, verify that equipment onsite matches that listed in the permit, and review other pertinent information. Copies of inspection reports from the Department's compliance inspections, including documentation of inspectors' observations and identification of any deviations or potential violations, may be requested through the Department's Freedom of Information process.

DHEC's Oversight for Air Quality Analysis – Comments were received regarding DHEC's process to independently evaluate data for the proposed facility for air quality analysis and questioning the basis for predicted concentrations of air pollutants. A comment also inquired into whether and how frequently environmental reviews would be conducted and who would be conducting them.

Department Response

The emissions calculations and calculation methodology presented in the application were reviewed and confirmed for accuracy and completeness. Please see the *Additional Sources of Dust and Fugitive Dust and Their Calculations* section for more information regarding those calculations and their technical basis. The emissions calculated for PM₁₀ and PM_{2.5} were below the threshold to require an air dispersion modeling analysis. However, out of an abundance of caution, the facility conducted air dispersion modeling and submitted it with the application package for review.

The air dispersion modeling the facility submitted with the construction permit application was checked, in detail, by a professional meteorologist on our DHEC staff to ensure the modeling was set up properly and that all the modeling inputs, including emissions and other source and facility parameters, were properly entered into the model. The model was then independently executed using completely independent model inputs, meteorology, and terrain to verify the model results. DHEC confirmed the applicant's modeling results. Based on the modeling results, operation of the proposed quarry as outlined in the permit application is not expected to cause or contribute to the exceedance of any ambient air quality standard. Please see the *Air Pollution Impacts* section for further discussion on the air dispersion modeling performed for this facility.

As to the question about environmental reviews, during the Department's unannounced air inspections, the inspectors review all required records, observe the facility's processes while in operation, make visual emission observations, verify that the equipment onsite matches those listed in the current permit, and review any

other pertinent information. Aside from unannounced inspections, inspections will also occur on a complaint-driven basis. Any alleged violations are detailed in the inspection report and referred to the Department's Enforcement Section. The Department is unable to speak to any reviews conducted by county or other entities outside of DHEC.

Air Dispersion Modeling Study for the BreakThru Beverage Facility – A comment was received requesting a comprehensive air quality modeling study of the proposed quarry to protect the health and safety of employees at the nearby BreakThru Beverage facility.

Department Response

Because emissions from the proposed facility are predicted to be minimal and below threshold levels, ordinarily the facility would not be required to submit an air dispersion modeling analysis. However, the facility chose to submit air dispersion modeling using the EPA approved refined model to predict the effects of PM₁₀ process emissions. The results of that modeling, assuming a continuous 24/7 operation, indicate the predicted concentrations at the facility boundary and beyond, including at the BreakThru Beverage facility, will be well below the health-based ambient air quality standard.

Air Dispersion Modeling for the Kershaw Mining Quarry – A commenter asked whether there had been any study of air quality for the Kershaw Mining quarry over a period of time since the facility began operations.

Department Response

Because the emissions at the Luck Stone Quarry in Kershaw County were expected to be minimal, the facility was not required to submit an air quality analysis as part of its application. No air quality study specific to the operation of the Luck Stone Quarry in Kershaw County has been conducted. Both modeling and historical ambient air monitoring at other, larger emitting, quarries indicate that operations at the Fairfield Quarry are not expected to cause or contribute to an exceedance of any ambient air quality standard.

Blasting – Comments were received with respect to blasting activities, vibrations, and seismic damage.

Department Response

The air permit does not address blasting activities, as such activities at a granite quarry are regulated by the South Carolina Mining Act. The comments related to blasting will be considered by the Bureau of Land and Waste Management (BLWM) as part of the review of the mining permit application.

Radon – Comments regarding the off-gassing of radon were received.

Department Response

Radon is a radioactive gas that comes from the natural decay of uranium 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 air, where it quickly disperses and dilutes. Air quality regulations relevant to this permit action do not regulate radon from granite quarry operations. For more information about radon and how to test radon concentrations in your home, please visit the SC DHEC radon website at www.scdhec.gov/radon.

Citizen Panel Board – Comments were received requesting a citizen panel board.

Department Response

Craig Kennedy, a consultant working with Luck Stone, provided the following in response to a citizen panel board question:

“Luck Stone Corporation has committed to work with the community to establish a Community Interest Engagement Group (CIEG). The offered CIEG will be comprised of residential entity representation (Homeowner Association/HOA or equivalent) within a two mile radius of the subject property and individual adjoining property owners. This group will meet at minimum on a quarterly basis or as determined by the CIEG. The CIEG will focus discussions on ongoing activities, future development planning, and to mutually share community opportunities for collaboration.”

Truck Traffic – Comments were received regarding the impacts from increased truck traffic, including emissions and safety concerns for existing roads due to the increased volume of truck traffic.

Department Response

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. Tailpipe emissions from mobile sources 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 to ensure fugitive dust emissions are minimized.

Within the dust control plan, signage with respect to SC Code of Laws Sections 56-5-4100 and 56-5-4110 shall be posted on site. To promote safety during hauling, these laws require that haul trucks transporting aggregate from quarries prevent the escape of materials loaded onto vehicles, that escaped substances or cargo be cleaned from highways, and that loads and covers be firmly attached.

Noise Levels – Comments were received concerning noise levels of the facility and related operations, including concern that noise levels would not be monitored and reported to nearby property owners on a regular basis.

Department Response

The Department does not have any noise standards in its air quality regulations and therefore lacks authority to 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.

Further, the DHEC mining permit requires the facility to use best management practices to minimize noise. Please see the Luck Stone mining permit for more information.

Community/Economy/Quality of Life Concerns and Quarry Location -

Comments were received regarding the potential impacts to the community's economy, growth, property values, aesthetics, and way or quality of life. Comments also stated concern about the location of the proposed quarry and urged consideration for the adoption of location standards for mining activities.

Department Response

A community's quality of life and economy can be impacted both positively and negatively by a variety of factors. The Department does not have the authority to base permit decisions on these factors. Furthermore, the Department does not have the authority to dictate where a mining facility locates or make zoning decisions. Zoning decisions are made at the local level by city or county zoning authorities, usually before a permit request is submitted to the Department. The permit decision

is based on the Department's technical review of the permit application and the applicable air regulations and standards in place at the time of the Department's review. As mentioned previously in the *Air Pollution Impacts* Section, these air quality regulations are set to protect public health and the environment.

Impacts on Other Non-Air Quality Resources – Comments were received expressing concerns about impacts to non-air quality resources, such as impacts to wildlife/animals, impacts to land, soil, structures, and cultural resources, light pollution, mosquito increases, groundwater and well-water quality and quantity degradation, water usage, and impacts to creeks, lakes, other surface waters and vegetation from the proposed operation.

Department Response

Air permit decisions are based on the applicable air quality regulations and standards in place at the time of the Department's technical review of the permit application. Based upon this review, the proposed facility has met the requirements for issuance of a permit. The above-referenced non-air quality impacts addressed by commenters are outside the scope of the Department's air quality regulations and therefore are not addressed in the air quality permit. Luck Stone has also applied for a mining permit from BLWM and for a National Pollutant Discharge Elimination System (NPDES) permit from the Department's Bureau of Water (BOW). Although not addressed by the air quality permit, other issues raised by the commenters have been considered by BLWM and BOW as applicable to the facility's mining and water permit reviews. In addition, as discussed in the *Air Pollution Impacts* section above, secondary NAAQS for PM are set to protect public welfare, including protecting against air pollutant damage to buildings, animals, crops, and vegetation. Impacts to wildlife are also assessed by South Carolina's Department of Natural Resources (SC DNR) and reviewed by BLWM as part of the mine permit application process.

General Opposition and Support – SC DHEC received comments requesting denial of the permit.

Department Response

The Department considers and appreciates all comments made regarding the draft air quality permit for Luck Stone. However, the Department does not have the authority to make permitting decisions based on general community, business, employee and customer 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.