Company Name:	Luck Stone Corporation/Luck Cherokee	**Permit Writer:**	Nicholas Hoehn
Agency Air Number:	0600-0144	**Date:**	January 9, 2026
Permit Number:	CP-50000326 v1.0		

DATE APPLICATION RECEIVED: May 23, 2025

PROJECT DESCRIPTION

Synthetic minor construction permit application for the installation the 595 tons per hour processing plant and associated equipment in Gaffney, South Carolina. The processing plant will consist of crushers, screens, conveyors, bins, and a wash plant that will process granite into storage piles. The facility will be installing a portable 595-kilowatt diesel-fired generator. The generator is portable, non-road engine and will not remain at a location for more than 365 consecutive days and is exempt.

FACILITY DESCRIPTION

SIC CODE: 1423, Crushed and Broken Granite
NAICS CODE: 212313, Crushed and Broken Granite Mining and Quarrying
The portable facility will be capable of crushing aggregate at a rate of 595 tons per hour from the primary crusher. The process starts inside the pit where the stone will be mined and transported in trucks using plant haul roads. The stone will be dumped into the primary jaw crushing station where stone will be initially crushed and conveyed to the first screening station. At the first screening station, the material will be screened and conveyed to storage piles or conveyed to the cone crusher or secondary screen. At the secondary screening station, the material will be screened and conveyed to storage piles or conveyed to a second cone crusher or tertiary screen. At the tertiary screening station, the material will be screened and then either conveyed to storage piles, recycled back to the crushers/screens, or conveyed to the wash plant. The wash plant is a totally wet process and is not expected to generate air emissions. Lastly, the material will be transferred to customer trucks from one of the storage piles and the trucks will exit the site using the customer haul roads

OPERATING PERMIT INCORPORATION

The facility will be granted coverage under the General Conditional Major Operating Permit for Nonmetallic Mineral Processing Plants with the request for an operating permit.

EMISSIONS

Drilling and Truck Loading

- Uncontrolled and controlled PM, PM_{10}, and $PM_{2.5}$ emissions from wet drilling and truck loading at the mine are calculated based on the U.S. Environmental Protection Agency (EPA) Compilation of Air Pollutant Emission Factors, AP-42, Section 11.19.2, Table 11.19.2-2, 1995 edition, August 2004 update.
- AP-42, Table 11.19.2-2 only provides truck loading emission factors for PM_{10} emissions. PM emissions for the truck loading within the quarry were conservatively assumed to be three times PM_{10} emissions from truck unloading of fragmented stone.
- AP-42 Section 11.19.2 does not provide $PM_{2.5}$ emission factors for wet drilling or truck loading. In cases where $PM_{2.5}$ emission factors were not determined, the PM_{10} emission factor was used and adjusted based on the particle size multiplier (0.053 – $PM_{2.5}$/0.35 – PM_{10}) contained in AP-42 Section 13.2.4 for Aggregate Handling and Storage Piles.

Material Handling

- Uncontrolled and controlled PM, PM_{10}, and $PM_{2.5}$ emissions from material handling are calculated based on the EPA Compilation of Air Pollutant Emission Factors, AP-42, Section 11.19.2, Table 11.19.22, 1995 edition, August 2004 update. Controlled emissions are based on using wet suppression.
- AP-42, Table 11.19.2-2 only provides truck loading emission factors for PM_{10} emissions. PM emissions for the final product truck loading were conservatively assumed to be three times PM_{10} emissions. In cases where $PM_{2.5}$ emission factors were not determined, the PM_{10} emission factor was used and adjusted based on the particle size multiplier (0.053- $PM_{2.5}$/0.35- PM_{10}) contained in AP-42 Section 13.2.4 for Aggregate Handling and Storage Piles.
- No PM emissions data was provided in AP-42 for primary or secondary crushing. Therefore, it was conservatively assumed that primary and secondary crushing emissions were equal to tertiary crushing.

Material Storage

- Emission factors of 3.2 lbs PM per day per acre, 1.6 lbs PM_{10} per day per acre, and 0.23 lbs $PM_{2.5}$ per day per acre were used for storage pile wind erosion calculations. The PM emission factor is based on an equation in the EPA Document 450/2-92-004 "Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures," Equation 2-12. Based on the referenced document, the fraction of PM which is PM_{10} is estimated at 0.5. To obtain the $PM_{2.5}$ emission factors, the PM emission factor was used and adjusted based on the particle size multiplier (0.053 $PM_{2.5}$/0.74- PM) contained in AP-42 Section 13.2.4 for Aggregate Handling and Storage Piles.
- The wind erosion equation used to calculate the PM emission factor is shown below:

$$E = 1.7 \cdot \left(\frac{s}{1.5}\right) \cdot \left(\frac{365 - p}{235}\right) \cdot \left(\frac{f}{15}\right)$$

Where:

- E = lbs PM per day per acre
- s = 3.9 silt content % (from AP-42 5th Edition Table 13.2.4-1 for various limestone products)
- p = 110 number of days with ≥ 0.01 inches of precipitation per year (from AP-42 Figure 13.2.21)
- f= 10 percentage of time that the unobstructed wind speed exceeds 5.4 m/s at the mean pile height (engineering estimate)

Transportation (Haul and Customer Roads)

- Uncontrolled emissions from the haul roads and customer roads are based on the AP-42, Section 13.2.2 (Unpaved Roads), Equations 1a and 2, for vehicles traveling on unpaved surfaces at industrial sites. The equation is provided below, and the variables are defined:

$$E_{ext} = \left(k\left(\frac{s}{12}\right)^{a}\left(\frac{W}{3}\right)^{b}\right)\left(\frac{365 - P}{365}\right)$$

Where:

- E_{ext} = annual or other long-term average emission factor in the same units as k, a, and b = constants (Table 13.2.2-2)

- s = Surface material silt content (%) - (Table 13.2.2-1, mean = 8.3 haul roads and 10 for customer roads)
- W = average weight of vehicles (tons)
- P = number of days with at least 0.01 inches of precipitation during the averaging period. (P = 117 days/yr as taken from https://www.currentresults.com/Weather/South-Carolina/average-yearlyprecipitation.php#c for Gaffney, South Carolina)

- Controlled emissions from the haul roads and customer roads assume a control efficiency of 90% for keeping the roads wet suppressed during transportation activities.

PROJECT EMISSIONS WITH FUGITIVE EMISSIONS						
Pollutant	**Uncontrolled**		**Controlled**		**PTE**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
PM	114.33	500.77	10.19	44.64	114.33	<250.0
PM10	40.76	178.52	3.62	15.87	40.76	<100.0
PM2.5	5.95	26.05	0.54	2.35	5.95	24.07

PROJECT EMISSIONS*						
Pollutant	**Uncontrolled**		**Controlled**		**PTE**	
	lb/hr	**TPY**	**lb/hr**	**TPY**	**lb/hr**	**TPY**
PM	99.24	434.67	8.50	37.24	99.24	<250.0
PM10	36.29	158.96	3.09	13.52	36.29	<100.0
PM2.5	5.50	24.07	0.48	2.10	5.50	24.07

*Facility-Wide project emissions do not include emissions from the fugitive sources since the facility is not one of the 28 source categories required to include fugitive emissions in its potential to emit.

SOURCE TEST REQUIREMENTS

All sources subject to 40 CFR 60 Subpart OOO shall meet the fugitive emission limits within 180 days of initial operation.

ALGORITHM

The basic algorithm for calculating monthly facility wide PM and PM_{10} emissions is as follows:

PM = P x EF x CF

Where:

- PM is the PM emissions in tons per month.
- P is the total actual amount of material processed in tons per month.
- EF is the PM emission factor in pounds per tons. The emission factors are provided in the table below.
- CF is the conversion factor of one ton per 2000 pounds.

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Values for EF in Algorithm			
Source	**PM Emission Factor (lb/Ton)**	**PM_{10} Emission Factor (lb/Ton)**	**Emission Factor Basis**
Crushing	0.0012	0.00054	AP-42 Table 11.19.2-2
Screening	0.0022	0.00074	
Conveying	0.00014	0.000046	

REGULATIONS

Applicable - Section II(E) *(Synthetic Minor)* – The facility has uncontrolled PM emissions above the major source threshold of 250.0 tons per year (tpy) for PSD and PM_{10} emissions above the Title V major source threshold of 100.0 tpy. The facility is requesting a PSD avoidance limit of less than 250.0 tpy of PM and a Title V avoidance limits of less than 100.0 tpy of PM_{10}.

Synthetic Minor Limits					
Permit ID	**Equipment ID**	**Permit Issue Date**	**Pollutant**	**Emission Limit (TPY)**	**Explanation**
CP-50000326	Facility-Wide	This Permit	PM	<250.0	PSD Avoidance
CP-50000326	Facility-Wide	This Permit	PM_{10}	<100.0	Title V Avoidance

The facility also requested a 100.0 tpy limit for PM in the application. PM has a major source threshold of 250.0 tpy, not 100.0 tpy. The BAQ has determined that the PM limit of 100.0 tpy is unnecessary for this project since the 250.0 major source limit for PSD avoidance is being established.

Not Applicable - Standard No. 1 *(Emissions from Fuel Burning Operations)* – This project does not have any fuel burning operations. The generator does not meet the definition of fuel burning operations.

Not Applicable - Standard No. 3 (state only) *(Waste Combustion and Reduction)* – The facility does not conduct waste combustion or reduction.

Applicable - Standard No. 4 *(Emissions from Process Industries)* - 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 of all of the equipment with a finished identifiable output of crushed stone. The PM limit from Section VIII is detailed below in the table. All applicable sources shall not exhibit an opacity greater than 20% per Section IX. The facility is subject to section X for all non-enclosed operations and is required to develop and implement a BAQ approved fugitive dust control plan.

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Process	Max Process Weight Rate (tons/hr)	PM Allowable at Max (lb/hr)	Uncontrolled Emissions PM (lb/hr)	Controlled Emissions PM (lb/hr)	Monitoring
Aggregate Processing	595	71.1	99.24	8.50	Operation of the wet suppression systems in accordance with the permit and applicable regulations.

Not Applicable - Standard No. 5 *(Volatile Organic Compounds)* – This facility was not in existence until after July 1, 1979, and July 1, 1980, and does not have any permitting VOC emissions

Not Applicable - Standard No. 5.2 *(Control of Oxides of Nitrogen (NOx))* – This standard applies to any stationary source that emits or has the potential to emit oxides of nitrogen generated from fuel combustion. The Cummins generator is a fuel combustion source that generates NO_X emissions, however in accordance with Section I(B)(13), the generator is not subject to the requirements of this regulation.

Not Applicable - Standard No. 7 *(Prevention of Significant Deterioration)* – The facility is not one of the 28 specifically listed source categories. Therefore, its major source threshold is 250.0 tpy. The facility has uncontrolled PM emissions above this threshold, but the facility is requesting a PSD avoidance limit of less than 250.0 tpy of PM.

Applicable - 61-62.6 *(Control of Fugitive Particulate Matter)* – The facility is subject and shall develop and implement a BAQ approved fugitive dust control plan.

40 CFR 60 and 61-62.60 *(New Source Performance Standards (NSPS))*

Applicable - Subpart OOO – (*Standards of Performance for Nonmetallic Mineral Processing Plants*) - according to §60.671, nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located. Each crusher, screen and conveyor are subject to the requirements of this Subpart.

Not Applicable – Subpart IIII – (*Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*) - owners, operators and manufacturers of a stationary compression ignition internal combustion engine are potentially subject. The facility will operate one diesel 595 KW generator. This generator does not meet the definition of Stationary internal combustion engine as found in §60.4219 because the source is non-road and non-stationary.

Not Applicable - 40 CFR 61 and 61-62.61 *(National Emission Standards for Hazardous Air Pollutants (NESHAP))* - This facility does not emit the pollutants in a way that is subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radio nuclide, radon, or vinyl chloride)

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40 CFR 63 and 61-62.63 *(National Emission Standards for Hazardous Air Pollutants (NESHAP) for Source Categories)*

Not Applicable – Subpart ZZZZ – (*National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*) - owners or operators of stationary Reciprocating Internal Combustion Engines are potential subject to this subpart. The facility will operate one diesel 595 KW generator. This generator does not meet the definition of Stationary internal combustion engine as found in §63.6675 because the source is non-road and non-stationary.

Not Applicable - 61-62.68 *(Chemical Accident Prevention Provisions)* – The facility does not store or use chemicals subject to 112(r) above the threshold quantities describe by the regulation

AMBIENT AIR STANDARDS REVIEW

Applicable - Standard No. 2 *(Ambient Air Quality Standards)* - Emissions of PM_{10} were modeled for the mining and material handling operations, and it passed AERMOD analysis. Emissions of $PM_{2.5}$ were below the 1.14 lbs/hr threshold and thus, no modeling was required. No other pollutants are being emitted for this standard. See modeling summary dated January 9, 2026.

Not Applicable - Standard No. 8 (state only) *(Toxic Air Pollutants)* - The facility is not expected to emit toxic air pollutants and thus, a modeling demonstration for this standard is not required. See modeling summary dated January 9, 2026.

PERIODIC MONITORING					
ID	**Applicable Requirement**	**Measured Parameter**	**Required Monitoring Frequency**	**Reporting Frequency**	**Monitoring Basis/ Justification**
Facility-Wide	<250.0 TPY PM, <100.0 TPY PM_{10} (B.2)	Actual Emissions	Monthly	Annually	Direct comparison to limit
Wet Suppression	PM Limit NSPS Subpart OOO (B.7)	Water Flow to Discharge Nozzle	Weekly	On-site	The weekly inspections required in this condition meets the requirements of monthly inspections in 40 CFR 60.674(b).

PUBLIC NOTICE

This construction permit will undergo a 30-day public notice period, in accordance with SC Regulation 61-62.1, Section II(N) and SC Regulation 61-62.1, Section II(E)), to establish a PSD avoidance limit of less than 250.0 tons per year of PM and a Title V avoidance limit of less than 100.0 tons per year of PM_{10}. The comment period was open from August 13, 2025 to October 3, 2025 and the draft permit was placed on the BAQ website during that time period. No comments were received during the comment period.

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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.