



South Carolina Department of Health and Environmental Control

Luck Stone - Chester Quarry Public Meeting

**October 17, 2019
6:30 PM**



South Carolina Department of Health and Environmental Control

Draft Synthetic Minor Air Construction Permit Bureau of Air Quality

Introduction

- Luck Stone produces crushed stone and gravel used as the foundation for roads, bridges, and buildings in the Southeast.
- Proposed New Quarry and Processing Plant: Highway 9, Chester SC

Project Overview

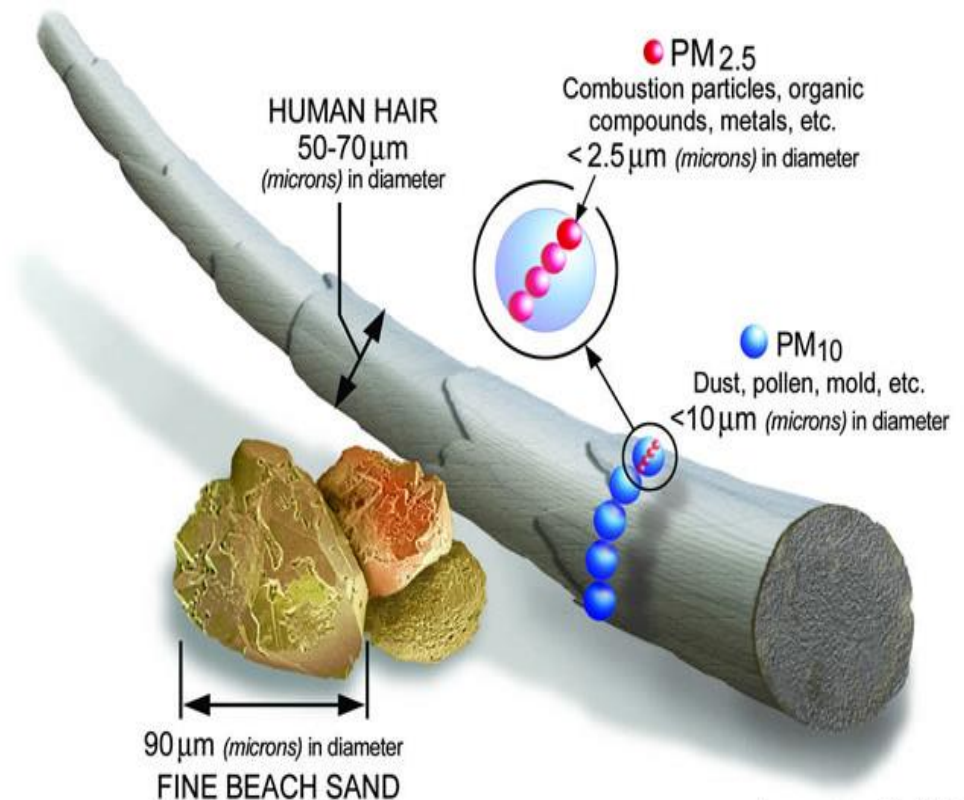
- 550 tons per hour Stone Processing Plant
 - Process Equipment
 - Crushers
 - Screens
 - Conveyors
- Additional sources of dust generated onsite
 - Plant and Customer Haul Roads
 - Storage Piles

Draft Air Construction Permit

- Pollutant addressed: particulate matter (dust)
- Permit compliance demonstration includes minimization and control of dust
- Weekly recorded inspection of water spray systems to ensure proper operation and dust control
- Potential (“worst case”) emissions below major thresholds with wet suppression.

Particulate Matter

- Mixture of solid particles and liquid droplets
- PM₁₀: Inhalable particles, with diameters 10 microns (μm) and smaller
- PM_{2.5}: Fine inhalable particles, with diameters 2.5 microns (μm) and smaller



Draft Air Construction Permit

- Federal Regulation Opacity Limitations
 - Required to test equipment to ensure opacity limitation being met
 - 7% opacity limit for screeners/conveyors
 - 12% opacity limit for crushers
- State Opacity Limitations
 - 20% facility-wide opacity limit (includes dust from storage piles and on-site truck traffic)

Example of Opacity

20% Opacity



40% Opacity



80% Opacity



Air Quality Analysis

Air Pollutant	Max Predicted Concentration ($\mu\text{g}/\text{m}^3$)	Background Concentration ($\mu\text{g}/\text{m}^3$)	Total Concentration ($\mu\text{g}/\text{m}^3$)	State/Fed. Standard ($\mu\text{g}/\text{m}^3$)	Meets Standard?
PM ₁₀ 24-hr	80.9	42.0	123	150	Yes

- The background concentration of the location is $42.0 \mu\text{g}/\text{m}^3$
- The predicted facility concentration is $80.9 \mu\text{g}/\text{m}^3$
- Combined, the total concentration will be $123 \mu\text{g}/\text{m}^3$ and remains below the National Ambient Air Quality Standard (82% of standard)

Onsite Dust Control

- Dust control plan to be reviewed prior to operation
 - Addresses water trucks, truck traffic, storage piles, and process equipment
 - Crusher/screeners/conveyors equipped with wet suppression spray nozzles
 - Onsite truck traffic dust is controlled by the use of water trucks

Air Construction Permit

- Includes:
 - Applicable State and Federal Regulations
 - Recordkeeping, reporting and/or testing requirements that demonstrate compliance
 - “Synthetic Minor” construction permit restricts facility to less than 250.0 tons/yr for PM/PM₁₀ and less than 100.0 tons/yr PM₁₀ to avoid “major” thresholds

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