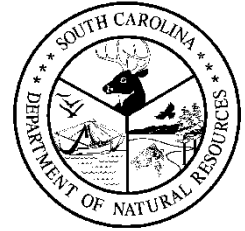


South Carolina Department of Natural Resources



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Robert H. Boyles, Jr
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Lorianne Riggan
Director, Office of
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May 14, 2021

Jeremy E. Eddy, Project Manager
S.C. Department of Health and Environmental Control
Bureau of Land and Waste Management
Division of Mining and Solid Waste Management
2600 Bull Street
Columbia, SC 29201

Electronic submission

RE: Mine Permit Application I-002329
Fairfield I-77 Quarry, LuckStone Corporation, Fairfield County, SC

Dear Mr. Eddy,

Personnel with the South Carolina Department of Natural Resources (SCDNR) have reviewed the proposed project and evaluated its impact on natural resources.

Project Summary

LuckStone Corporation has applied to the S.C. Department of Health and Environmental Control (SCDHEC) for a permit to mine granite at a site located in the vicinity of the intersection of S.C. Highway 34 and Simpson Circle in Fairfield County, approximately 3.5 miles west of Ridgeway, South Carolina (34.317666, -81.017189). A proposed reclamation plan to restore the site to pond/lake, grasslands, and commercial development has been submitted with the application. According to the application materials, the proposed project involves mining granite/gneiss on a 416.8 acre site, comprised of a 259.5 acre affected area, 77.9 acre area reserved for future impacts, and 79.4 acres of buffer. Average depth of mining will be approximately 595 feet from ground surface with a maximum depth of 650 feet. Final pit floor elevation will be -80 feet msl. According to the permit application, "granite will be drilled, explosives loaded and blasted to fragment stone into manageable sizes to facilitate loading into haul trucks and crushing by primary crusher." SCDNR and SCDHEC staff attended a site visit with the applicant and S&ME Inc. staff on May 11, 2021.

SCDNR Comments

Readily available scientific literature indicates that the ability of vegetated buffers to trap suspended sediments are positively correlated with width and negatively correlated with slope (Wenger 1999). A literature review performed by Castelle et al (1994), found that buffers must be 30 meters (100 ft) wide to maintain the health of the biota in nearby streams, but that this width would need to be increased for steeper slopes. Peterjohn and Correll (1984) found that for a 5% slope, only ninety percent of the suspended sediment was trapped in the first 19 meters (62 ft), and that the entire 60-meter (164 ft) buffer trapped only 94% of the sediment. Due to the steep slopes on the site, the SCDNR requests that onsite and offsite aquatic resources be protected by vegetated buffers at least 100-foot wide wherever practicable.

According to the Approved Jurisdictional Determination submitted with the application, sixteen jurisdictional wetlands (1.18 acres) and twenty-three jurisdictional tributaries (16,314 lf/1.93 acres) were observed on the site. While most of these aquatic resources will be avoided throughout all three phases of the proposed mine, Phase 2 appears to involve direct impacts to streams JT-5 (2,629 lf) and JT-5A (349 lf), as well as wetland JW-C (0.22 acre). Please note that these impacts exceed the thresholds for coverage under Nationwide Permit 44 – *Mining Activities* and will likely require Federal and State permits for permanent impacts to aquatic resources according to Sections 404 and 401 of the Federal Clean Water Act. Please note SCDNR reserves the right to review and comment on any required federal or state permits at the time of public notice issuance.

According to Figure 1 – *Proposed Monitoring Wells*, monitoring wells MW-3D and MW-4S appear to be located across the tributary on the bank opposite the Phase 1 pit. A shallow monitoring well at this location may not capture the altered hydrology caused by mining activities and would more likely reflect the hydrology of the stream. The SCDNR recommends that these wells should be placed on the same bank as the Phase 1 pit and as far from streams as possible to minimize the influence of stream hydrology on monitoring data.

According to SCDNR data, there are currently no records of threatened and endangered species within two miles of the proposed site. However, several fish species of conservation concern as designated by the State Wildlife Action Plan (SWAP), have been collected by SCDNR biologists in Dutchman’s Creek, which flows through the site and may be impacted by mining activities. These species are Swallowtail Shiner (*Notropis procne*), Rosyside Dace (*Clinostomus funduloides*), Highfin Shiner (*Notropis altipinnis*), and Highback Chub (*Hybopsis hysinotus*). SWAP species are those species of greatest conservation need not traditionally covered under any federal funded programs. Species are listed in the SWAP because they are rare or designated as at-risk due to knowledge deficiencies, species common in South Carolina but listed rare or declining elsewhere, or species that serve as indicators of detrimental environmental conditions. The SCDNR recommends that appropriate measures should be taken to minimize or avoid impacts to this species of concern. Please keep in mind that information regarding the presence of species is derived from existing databases, and SCDNR does not assume that it is complete. Areas not yet inventoried by SCDNR biologists may contain significant species or communities.

SCDNR finds that the proposed project may have additional adverse impacts on natural resources. In order to further reduce potential impacts, SCDNR recommends that the following best management practices for mining be applied during the preparation, excavation, extraction and reclamation phases of this project to ensure that offsite impacts are minimized.

- Prior to beginning any land disturbing activity, appropriate erosion control measures, such as silt fences, silt barriers or other devices, must be placed between the disturbed area and any nearby waterways and maintained in a functioning capacity until the area is permanently stabilized.
- All necessary measures must be taken to prevent oil, tar, trash and other pollutants from entering the adjacent offsite areas.
- The project must be in compliance with any applicable local floodplain, erosion and sediment control and/or storm water ordinances.
- Land disturbance should be kept to a minimum and accomplished in phases, when possible. Disturbed areas should be exposed only for the period of time required to extract the resource and vegetation should be re-established promptly.
- Land clearing should not begin until sediment basins and other conservation practices have been established. Clearing should be limited to the areas to be immediately mined.
- The number of overburden piles should be kept to a minimum and runoff should be diverted into sediment basins until vegetation can be established. Overburden piles should not be placed in drainage-ways or floodways.
- Upon completion, all disturbed areas must be permanently stabilized with vegetative cover

(preferable), or other erosion control methods as appropriate. The SCDNR prefers and recommends the use of native warm season grasses and/or other native forbs that would be beneficial for wildlife and pollinators for stabilization. Native warm season grass species suggestions include: Indiangrass (*Sorghastrum nutans*), big bluestem (*Andropogon gerardii*) and little bluestem (*Schizachyrium scoparium*). A list of beneficial pollinator plant species, such as milkweed (*Asclepias spp.*), for the southeast may be found at www.xerces.org/pollinators-southeast-region/ or by visiting <http://www.pollinator.org/guides>. Additional South Carolina native pollinator plant species that may be applicable for use at the site during reclamation can be found in Appendix A of the Technical Guidance for the Development of Wildlife and Pollinator Habitat at Solar Farms at <https://www.dnr.sc.gov/solar/assets/pdf/solarHabitatGuide.pdf>.

- At the time of reclamation of the mine site to a pond, the SCDNR recommends that you consult with the Natural Resources Conservation Service and Clemson Extension if the ultimate goal for the pond is to provide recreational fishing opportunities. Incorporate as much shoreline variation with the use of peninsulas and islands in reclamation to provide ideal shoreline habitat for wildlife and aquatic vegetation. Care should be taken to create littoral zone habitat near shorelines, approximately 3 feet or less, and the deeper portions of the pond should ideally be no more than 8 to 15 feet for recreational fishing. For your reference, the SCDNR Guidelines for Private Recreational Ponds can be found online at www.dnr.sc.gov/environmental/docs/private-ponds.pdf.

SCDNR has no objections to the proposed work provided the following recommendations are abided and BMPs are incorporated into project plans. Please note SCDNR reserves the right to review and comment on any required federal or state permits at the time of public notice issuance. Thank you for the opportunity to review this project and provide comments. Should you have any questions or need more information, please do not hesitate to contact me by email at DanielT@dnr.sc.gov or by phone at 803.734.3766.

Sincerely,



Tom Daniel
Office of Environmental Programs

References

Castelle, A. J., A. W. Johnson and C. Conolly. 1994. Wetland and stream buffer requirements - A review. *Journal of Environmental Quality*.

Peterjohn, W. T. and D. L. Correll. 1984. Nutrient dynamics in an agricultural watershed: Observations on the role of a riparian forest. *Ecology* .

Wenger, S., 1999. A Review of the Scientific Literature on Riparian Buffer Width, Extent, and Vegetation. Publication of the Office of Public Service and Outreach, Institute of Ecology; University of Georgia, Athens, Georgia (March 5, 1999).