



Mining Form MR-500

S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT
DIVISION OF MINING AND SOLID WASTE PERMITTING
2600 BULL STREET, COLUMBIA, SC 29201
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SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL
BUREAU OF LAND AND WASTE MANAGEMENT
DIVISION OF MINING AND SOLID WASTE PERMITTING
2600 Bull Street; Columbia, SC 29201

RECLAMATION PLAN
FORM MR-500 DATE VERSION ADOPTED: 7/1/94

As required in Section 48-20-90 of the South Carolina Mining Act, "An operator shall submit with his application for an operating permit a proposed reclamation plan. The reclamation plan for an operating permit only must be furnished to the local soil and water conservation district in which the mining operation is to be conducted. The plan must include as a minimum each of the elements specified in the definition of 'reclamation plan' in Section 48-20-40 and information required by the department. The reclamation plan must provide that reclamation activities, particularly those relating to control of erosion, to the extent feasible, must be conducted simultaneously with mining operations and be initiated at the earliest practicable time after completion or termination of mining on a segment of the permitted land. The plan must provide that reclamation activities must be completed within two years after completion or termination of mining on each segment of the area for which an operation permit is requested unless a longer period specifically is permitted by the department."

I. APPLICANT INFORMATION

1. Name of Company: Vulcan Construction Materials, LLC

2. Name of Proposed Mine: Fairfield Quarry County: Fairfield

3. Home Office Address: 201 Brown Road (Street and P.O. Box) (864) 299-4785 (Telephone No.)

Piedmont SC 29673-8513 (864) 299-0610 (City) (State) (Zip Code) (Fax. No.)

4. Local Office Address: Same (Street and P.O. Box) Same (Telephone No.)

Same (City) (State) (Zip Code) Same (Fax. No.)

5. Designate to which office Official Mail is to be sent:

Home Office: x Local Office:

6. Name of company personnel and their title to be the contact for official business and

correspondence: John R. Aultman, PE - Manager of Environmental Services

II. ENVIRONMENTAL PROTECTION

1. Describe practices to protect adjacent resources such as roads, wildlife areas, woodland, cropland and others during mining and reclamation.

The mine permit area is located in a rural setting with land cover consisting of hardwood and managed pine forests for timber products. Several rural residential homes are located east the permit area. Of the 924.1 acres of permitted land, 199.4 acres will be undisturbed buffer. The nearest highways to the permit area are I-77 2,000 feet west and S-20-41 (Old River Rd.) adjacent and north. Based on a survey, there are no threatened and/or endangered species or sensitive habitats on-site that would be potentially affected by mining and reclamation (Kleinfelder "Threatened & Endangered Species Survey" June 2019 report attached). Wetlands on-site will be avoided first and where direct impacts to wetlands are unavoidable, the impacts will be minimized to the degree practical. Wetlands or waters of the U.S. directly impacted will be permitted through the U.S. Army Corps of Engineers' Nationwide Permit or Individual 404 permitting process. If needed, a 401 Water Quality Certification will be obtained from DHEC to certify water quality will not be adversely impacted due to loss of jurisdictional waters of the US.

2. Describe proposed methods to limit significant adverse effects on adjacent surface water and groundwater resources.

Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment both mobile and stationary, immediate cleanup of any of petroleum products spillage, removal of scrap material. Setbacks and established buffers along stream banks and soil stabilization will provide protection to surface water resources during and after mining. Due to the geology, groundwater resources will only be minimally drawn down from dewatering in the pit. Once mining is terminated, groundwater levels will rebound to approximate original levels. The mining process will not use chemicals in the mining or processing of crushed stone; consequently, no potential for chemical contamination to groundwater resources. Coagulants may be used to assist in removing suspended solid, but must be approved by DHEC prior to use.

3. Describe proposed methods to limit significant adverse effects on known significant cultural or historic sites within the proposed permitted area.

A cultural and historic resources survey of the proposed mine permit area was conducted to determine if any such resources would be adversely affected. Of the sites investigated on the mine permit area, none were determined to be eligible for listing in NRHP.

4. Describe method to prevent or eliminate conditions that could be hazardous to animal or fish life in or adjacent to the permitted area.

Proper reclamation of the mine site will include stabilizing all overburden storage piles with vegetation, removal of mine equipment both mobile and stationary, clean-up of any spillage of petroleum products, removal of scrap material. Setbacks and established buffers along stream banks and soil stabilization will provide protection to fisheries in nearby streams. Establishing 3:1 slopes in the overburden along the edge of the pit and overburden storage areas and establish fencing around the pit at final reclamation where exposed highwalls may be present will remove hazardous conditions for the public and indigenous animal populations.

5. Describe how applicant will comply with State air quality and water quality standards as established by the S.C. Department of Health and Environmental Control.

To operate the quarry and processing plant, the applicant will complete the application process to obtain the Air Quality Construction Permit and ultimately the Air Quality Operating Permit. These permits set the quantity of air particulates that can be emitted to be protective of air quality standards. Also, compliance with the NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Faculties (SCG730000) will ensure water quality standards are met.

With the termination of mining all mobile mine equipment and processing plant equipment will be removed from site. Once the process plant equipment is removed from site, the Air Quality Operating Permit can be terminated. Stone stockpiles, fines and barren soils, potential sources of dust after mining, will be either removed (stone stockpiles) or stabilized with vegetation to eliminate windblown dust.

Complete site reclamation with proper grading to reduce slopes on unconsolidated materials to 3:1 and establishment of vegetation to stabilize soils will prevent erosion and sediment runoff after mining. Also, the removal equipment will eliminate potential for contamination of ground and surface water on site after mining.

III. RECLAMATION OF AFFECTED AREA

6. State useful purpose(s) the affected land is being proposed to be reclaimed to. More than one purpose may be checked, but information should be submitted to support the feasibility for each proposed purpose.

- | | |
|----------------------------|-------------------------|
| a. Lake or pond_____x_____ | f. Grassland_____x_____ |
| b. Agriculture_____ | g. Recreation_____ |
| c. Woodlands_____ | h. Wetlands_____ |
| d. Residential_____ | i. Park_____ |
| e. Commercial_____ | j. Other_____ |

7. State the final maximum surface gradient(s) (slope) in soil, sand, or other unconsolidated materials on reclaimed land. Surface gradients steeper than 3H:1V (18 degrees or 33 percent) may be required to submit geotechnical data and studies to demonstrate that the steeper slopes will remain stable following final reclamation.

The final maximum surface gradient for slopes in overburden storage areas and slopes in overburden in the pit will be 3:1.

8. How will the final slopes in unconsolidated material be accomplished? If the slope will be by backfilling, demonstrate that there is adequate material to accomplish the stated final gradient. If gradient is to be achieved by bring in material from outside the permitted area, state the nature of the material and approximate quantities. If the gradient is to be achieved by grading, show that there is adequate area for grading to achieve gradient (ie. adequate distance between the property line and edge of highwall). Operator should show calculations or other appropriate information to demonstrate that there is adequate materials in backfilling and grading to meet the requirements for final slope.

Overburden may be backfilled in to areas within the pit but not for the purpose of achieving 3:1 slope along pit highwalls. Slopes in the overburden surrounding the pit will be cut slopes to 3:1 gradient.

9. Describe the plan for revegetation or other surface treatment of affected area(s). The revegetation plan shall include but not be limited to the following: (a) planned soil test; (b) site preparation and fertilization; (c) seed or plant selection; (d) rate of seeding or amount of planting per acre; (e) maintenance.

Vulcan will follow soil test, seed bed preparation, seed mix selection, soil amendments (fertilizer, lime, growth stimulants, etc.), cover and seeding rates based upon SC DOT's *Supplemental Technical Specification (SC-M-810-2(04/11)) for Seeding*.

Revegetated sites will be maintained with periodic inspections to detect areas with significant erosion, seed germination failure or significant plant die off. Site will be inspected after significant storm events to detect wash outs or gullies in planted areas. Damaged area will be repaired where necessary by fixing erosion damage and reseeding as necessary.

- 10. Provide, as a separate document, a closure plan of the mine and permitted facilities to prevent a release of contaminants from being harmful to the environment. A closure plan is not necessary for all mines, but is required where the possibility exist for (a) acid rock drainage; (b) where the National Pollutant Discharge Elimination Systems (NPDES) Permit have discharge limitation parameters other than pH and Total Suspended Solids (TSS); (c) chemically treated tailings or stockpiles (excludes fertilizer or lime for revegetation purposes).**

Reclamation for the quarry will not require a closure plan. A) The granite may contain minor amounts of pyrite as an accessory mineral, but not in quantities to create acid mine drainage. B) This quarry qualifies for coverage under the *NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG-730000)* with no additional parameters other than pH and TSS. C) NO chemicals will be used in the mining or process (i.e., leaching agents, acids, etc.). However, coagulants may be used to increase the settling efficiency of suspended solids from waste water discharges to Waters of the State or internally on recycled process wash water.

- 11. Method of control of contaminants and disposal of mine waste soil, rock, mineral, scrap, tailings, slimes, and other material directly connected with the mining, cleaning, and preparation of mineral substances mined and includes all waste materials deposited on or in the permit area from any source.**

Granite fines created from processing the mined stone will accumulated in the clarification ponds of the wash circuit and periodically removed and stockpiled. The granite fines, once dried, can be sold as a product. Any granite fines remaining at the end of mining that was not sold, will be covered in topsoil and vegetated.

- 12. Method of reclaiming settling and/or sediment ponds.**

Settling and/or sediment ponds will not be removed from service and reclaimed until all soils within the sediment pond drainage is stabilized with vegetation and erosion controlled. Sediment basin receiving water from overburden storage areas will remain in place and converted for "post-mine development" as detention ponds.

- 13. Describe method of restoration or establishment of stream channels, stream banks and site drainage to a condition minimizing erosion, siltation and other pollution.**

The identified wetlands within the mine permit area will be avoided where possible; and, if not possible to avoid, the direct impacts will be minimized to the degree practical. Where wetlands must be directly impacted, the loss of wetlands will be mitigated following prescribed US Army Corps of Engineer procedures. Avoided wetlands will be protected with a 75-foot wide upland buffer.

- 14. What are the maintenance plans to insure that the reclamation practices established on the affected land will not deteriorate before released by the Department?**

Areas that have undergone final reclamation practices will be maintained through periodic inspections and conducting any necessary repairs in a timely manner.

- 15. For final reclamation, submit information about practices to provide for safety to persons and to adjoining property in all excavations. Identify areas of potential danger (vertical walls, unstable slopes, unstable surface on clay slimes, etc.) and provide appropriate safety provisions. These provisions can include but are not limited to setbacks, fencing, signs, benching, guardrails and boulders.**

The following mine segments will be reclaimed to provide safety to persons and adjoining areas.

Highwalls -- Any portion of exposed granite within the pit area with vertical highwalls that cannot be sloped to a 3h:1v gradient and in excess of 10 feet in height will be fenced.

Unstable Slopes -- All unconsolidated soils, e.g., saprolite overlying hard rock and overburden storage areas will be sloped to 3h:1v gradient and vegetated. Soils place to 3:1 gradients are stable and are not prone to landslides. Granite highwalls are inherently stable. However, any unstable boulders or zone near the saprolite overburden will be removed to ensure miner safety and for long term stability.

16. What provisions will be taken to prevent noxious, odious, or foul pools of water from collecting and remaining on the mined area? For mines to be reclaimed as lakes or ponds, provide supporting information that a minimum water depth of four (4) feet on at least fifty percent (50%) of the pond surface area can be maintained.

The final pit will be reclaimed as a pond/lake and will meet the above referenced regulatory requirement for sufficient depth. Sediment basins established to trap sediment in storm water runoff to mine construction and operation will be evaluated at time of performing reclamation work to determine if basin(s) are suitable to convert to freshwater ponds that will meet the regulatory requirement. Sediment pond not converted to ponds, will be removed, soil stabilized by grading and vegetation to prevent noxious pools of water from forming. Areas of the affected land not reclaimed to ponds will be properly graded to prevent unwanted pools of water from collecting and prevent foul water from forming.

17. Identify any structures (e.g. buildings, roads) that are proposed to remain as part of final reclamation. Provide justification for leaving any structures.

The office building and other support buildings may be left upon final reclamation. Also, some of the haul roads may be left to provide access to the property. All areas will be sloped and stabilized to prevent erosion and control sediment. Final justification for allowing structures or roads to remain as part of final reclamation will be provided at the end of mining when use of post reclamation property will be better understood.

18. Attach two (2) copies of a map of the area (referred to as the RECLAMATION MAP) that shows the reclamation practices and conservation practices to be implemented. The following should be shown:

- A. The outline of the proposed final limits of the excavation, during the number of years for which the permit is requested.
- B. The approximate final surface gradient(s) and contour(s) of the area to be reclaimed. This would include the sides and bottoms of mines reclaimed of ponds and lakes.
- C. The outline of the tailings disposal area.
- D. The outline of disposal areas for spoil and refuse (exclusive of tailings ponds).
- E. The approximate location of the mean shore line of any impoundment or water body and inlet and/or outlet structures which will remain upon final reclamation.
- F. The approximate locations of access roads, haul roads, ramps or buildings which will remain upon final reclamation.
- G. The approximate locations of various vegetative treatments.
- H. The proposed locations of re-established streams, ditches or drainage channels to provide for site drainage.
- I. The proposed locations of diversions, terraces, silt fences, brush barriers or other Best Management Practices to be used for preventing or controlling erosion and off-site siltation.
- J. Proposed locations of the measures to provide safety to persons and adjoining property.
- K. Segments of the mine that can be mined and reclaimed as an ongoing basis.
- L. The boundaries of the permitted area.
- M. The boundaries of the affected area for the anticipated life of the mine.
- N. The boundaries of the 100-year floodplain, where appropriate.
- O. Identify sections of mine where the final surface gradient will be achieved by grading and/or backfilling.
- P. A legend showing the name of the applicant, the name of the proposed mine, the north arrow, the county, the scale, the date of preparation and the name and title of the person who prepared the map.

THE REQUIRED RECLAMATION MAP SHALL HAVE A NEAT, LEGIBLE APPEARANCE AND BE OF SUFFICIENT SCALE TO CLEARLY SHOW THE REQUIRED INFORMATION LISTED ABOVE. THE BASE FOR THE MAP SHALL BE EITHER A SPECIALLY PREPARED LINE DRAWING, AERIAL PHOTOGRAPH, ENLARGED USGS TOPOGRAPHIC MAP OR A RECENTLY PREPARED PLAT. RECLAMATION MAP SHOULD BE THE SAME SCALE USED FOR THE SITE MAP.

IV. SCHEDULE FOR IMPLEMENTATION OF CONSERVATION AND RECLAMATION PRACTICES

19. As stated in Section 48-20-90 of the S.C. Mining Act, reclamation activities, to the extent feasible, must be conducted simultaneously with mining operations. Identify which areas or segments of the mine are not feasible to reclaim simultaneously with mining. Provide reasons why reclamation can not proceed simultaneously with mining in these areas.

Quarries are not feasible to conduct reclamation simultaneously with mining. Typically the pit, plant area and overburden storage areas are active throughout the mine life of a quarry.

20. Section 48-20-40(16)(l) of the S.C. Mining Act requires a, "time schedule, including the anticipated years for completion of reclamation by segments". This time schedule should meet the requirements of Section 48-20-90 of the Mining Act.

SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

Conservation & Reclamation Practices	Segment or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Construct access road from Hwy 41 to process plant – establish sediment & erosion control BMPs	Access Road	~5,000 ft	2022			
Locate & mark boundaries of Overburden Area 1	Ovbn Area 1 Phase I	58.1 ac	2020-21			
Locate & establish 75' upland wetland buffers for wetlands NOT to be impacted south to Ovbn Area 1	Wetland A & Ovbn 1	~6,200 lft	2020-21			
Locate & mark boundaries of Overburden Area 2	Ovbn Area 2 Phase I	49.8 ac	2020-21			
Locate & establish 75' upland wetland buffers for wetlands NOT to be impacted west & north of ovbn area 2	Wetland B & Ovbn 2	~5,000 lft.	2020-21			
Construct overburden storage areas - Establish brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.)	Ovbn Areas 1 & 2 Phase I	Varies	2021-23			Place BMPs where needed
Construct Sediment Pond 1	Ovbn Area 1	0.56 ac	2021-23			Initial Mine Construction
Construct Sediment Pond 2	Ovbn Area 1	0.38 ac	2021-23			Initial Mine Construction
Construct Sediment Pond 3	Ovbn Area 1	0.64 ac	2021-23			Initial Mine Construction
Construct Sediment Pond 4	Ovbn Area 2	2.45 ac	2021-23			Initial Mine Construction
Locate & mark boundaries of Office, Shop and Stockpile Area	Office, Shop and Stockpiles	33.5 ac	2020-21			
Establish temporary; brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.) during construction	Office, Shop and Stockpiles	33.5 ac	2020-21			Where and as necessary
Locate and mark Pit Boundary	Pit Phase I	44.3 ac	2020-21			
Locate & establish 75' upland stream buffers	Adjacent to Pit Phase I	5,600 lft.	2020-21			
Establish temporary sediment pond; brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.) where necessary	Pit Phase I	As necessary	2022			Initial Pit Development
AA – Affected Area; BMPs – Best Management Practices; Fert. – Fertilize; PL – Property Line; SB – Sediment Basin; ST – Sediment Traps SW – Stormwater; TS – Topsoil; WL – Wetlands;						

* Completed by the Department

Schedule Continued --

20. Section 48-20-40(16)(l) of the S.C. Mining Act requires a, "time schedule, including the anticipated years for completion of reclamation by segments". This time schedule should meet the requirements of Section 48-20-90 of the Mining Act.

SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

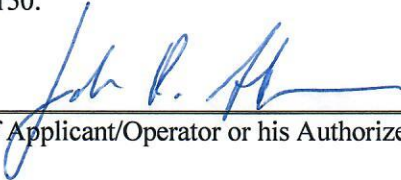
Conservation & Reclamation Practices	Segment or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Route Stormwater into pit	Pit	44.3 ac	Life of Mine			Adjust diversions as pit develops to ensure stormwater is diverted into pit
Construct Plant site - Establish brush barriers and other spot sediment control (i.e., silt fence, etc.) where necessary	Process Plant	Varies	2021-23			
Establish temporary; brush barriers and other spot sediment control (i.e., sediment tubes, rock check dams, silt fence, etc.) during construction	Process Plant	Varies	2021-23			
Install Groundwater Observation Wells	OW 1, 2, 3 & 4	4	2020-21			
Overburden revegetated after placement, as soon as feasibly possible, to increase sediment control efficiency	Ovbn Areas 1 & 2		Ongoing			Overburden is periodically stripped from pit as mining advances.
Locate and mark Ultimate Pit Boundary for Phase II	Ultimate Pit Phase II	127.7 ac	TBD			
Locate & mark boundaries for additional Overburden area; Ovbn design along with S & E plan design	Overburden Future Impact Phase II	TBD	TBD			Wetland delineations and buffers established for future overburden area;
Permit Tributary crossing – Compliant with Corps’ permitting requirements	Phase I/Phase II	TBD	TBD			
Final Reclamation - grade 3:1, topsoil, fertilize & revegetate cut slope around pit w/permanent vegetation	Pit	Various	Ongoing			Where cut slope is final and will not be disturbed by future mining.
Final Reclamation - grade 3:1, topsoil, fertilize & revegetate w/permanent vegetation	Ovbn Areas 1 & 2	Various	Ongoing			Once overburden reaches final elevation
Remove plant equipment, stockpiles - grade 3:1, topsoil, fertilize & revegetate w/permanent vegetation	Process Plant		End of Mining			
Allow pit to fill with water to final pool elevation	Pit		End of Mining			
Remove all equipment from site, remove all petroleum products, remove scrap materials, etc,	Permit Area		End of Mining			
Monitor vegetation growth, repair/reseed as necessary	Affected area	2	End of Mining			Continue through 2-yrs after mining.

AA – Affected Area; BMPs – Best Management Practices; Fert. – Fertilize; PL – Property Line; SB – Sediment Basin; ST – Sediment Traps SW – Stormwater; TS – Topsoil; WL – Wetlands;

* Completed by the Department

YOU ARE NOTIFIED THAT:

- 1) you, the operator, must file an application to modify the reclamation plan in the event actual reclamation varies from the set forth hereinabove, and
- 2) if at any time it appears to the Department that the activities under the reclamation plan are failing to achieve the purposes and requirements of the S.C. Mining Act, the Department may modify the RECLAMATION PLAN in accordance to Section 48-20-150.



Signature of Applicant/Operator or his Authorized Representative

John R. Aultman on behalf of Vulcan Materials Company

Printed Name of Applicant/Operator or his Authorized Representative

Manager of Environmental Services

Title

03/10/2020

Date

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Department Use Only

Permit No. _____ Date Application Approved _____ Date Bond Rec'd _____

Bond Amount _____ Blanket or Single Bond Permit Issuance Date _____

ACTION TAKEN ON THIS RECLAMATION PLAN

_____ Approved _____ Denied _____ Approved with Additional Terms and Conditions

By: _____
SECTION MANAGER

Date: _____