



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
Phone: 803-898-1362 Fax: 803-898-1426 E-mail: AskMines@dhec.sc.gov

RECLAMATION PLAN
DHEC FORM 500 DATE VERSION ADOPTED 7/1/94

Permit # I-001289

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: Wake Stone Corporation

2. Name of Proposed Mine: North Myrtle Beach Quarry County: Horry

3. Home Office Address: 6821 Knightdale Blvd. PO Box 190

(Street and P.O. Box)

Knightdale

NC

(Telephone No.)

919-266-1100

(City)

(State)

(Zip Code)

(Fax No.)

4. Local Office Address: 3990 Hwy. 9 Business East

(Street and P.O. Box)

Loris

SC

(Telephone No.)

843-756-3400

(City)

(State)

(Zip Code)

(Fax No.)

5. Name of company personnel and their title to be the contact for official business and correspondence: Samuel T. Bratton, President (sambratton@wakestonecorp.com)

6. Location of Mine: 3990 Hwy. 9 Business East

Loris, SC

State or County Hwy No.

Nearest Town or City

II. ENVIRONMENTAL PROTECTION

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

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

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

II. ENVIRONMENTAL PROTECTION

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

Mining related activities will be conducted in strict compliance with SC DHEC regulations governing such activities. Minimum 50' undisturbed vegetated buffers will be maintained along the permit boundary throughout the permit term. Impacts will be limited to those areas outlined in the approved mining permit. Paving and dust suppression will be utilized on the site entrance road to limit the generation of fugitive dust and "track-out" onto SC Hwy. 9.

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

Groundwater withdrawal will be in strict compliance with guidelines established in the Hydrogeologic Investigation report attached. The potentiometric surface of the Waccamaw/Duplin aquifer will be monitored in wells to be established along the Permit Boundary. Discharge of accumulated groundwater and surface runoff from the quarry pit will be in strict compliance with the NPDES and Stormwater permit(s). Process water will be maintained in a closed-loop recycle system of settling ponds and reservoir.

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

There are no known significant cultural or historic sites within the proposed permit area.

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

Land disturbing activities will be confined to the areas approved by the Mining Permit. Fuel and lubricants will be stored in an above ground containment structure. Overburden cut slopes will be graded to 3:1 (H:V) and vegetated for stability. Discharge of accumulated runoff water and/or pit effluent water will be in strict compliance with groundwater and surface water standards and NPDES/Stormwater Permit conditions.

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.

Fugitive emissions from stone processing equipment and on-site haul roads will be controlled by the use of wet suppression sprays. Process water will be maintained in a closed-loop recycle system of settling ponds and reservoirs. Groundwater and runoff water collected in the mine pit will be directly discharged only if water quality standards are met. Otherwise, this water will be held in a clarification pond until the water quality standards can be met.

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 <u>850</u>	f. Grassland _____
b. Agriculture _____	g. Recreation <u>*</u>
c. Woodlands <u>*</u>	h. Wetlands _____
d. Residential <u>*</u>	i. Park _____
e. Commercial <u>*</u>	j. Other <u>c+d+e+g=364 Ac.+/-</u>

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.

Slopes in sandy soils will not exceed 3H:1V. Slopes in dense clay soils will not exceed 2H:1V.

8. How will the final slopes in unconsolidated material be accomplished? If the slope will be by back filling, 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 (i.e. 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 back filling and grading to meet the requirements for final slope.

The final graded overburden cut slopes will be established at 3V:1H as pit development progresses throughout the life of the mine. These slopes will be provided with vegetative stabilization concurrent with mine development. Topsoil and root mat material will be maintained in the permanent storage area for use during final reclamation. Unexcavated buffers as detailed on the Site Plans will provide adequate distance between property boundary/permit boundary and any pit area to allow for establishment of the 3V:1H slopes.

9. Describe the plan for re-vegetation or other surface treatment of affected area(s). The re-vegetation 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.

See the "Re-vegetation Schedule" incorporated on the Site Plans/E&SC Plan Details Sheet.

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 re-vegetation purposes).

No closure plan is anticipated as acid producing minerals are not known to be present, no chemically treated tailings or stockpiles are anticipated, and no NPDES monitoring, other than turbidity and TSS is anticipated.

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.

Overburden and excess fines generated during mining and processing of the coquina/limestone will be placed in mined-out sections of the pit as pit development progresses during the life of the mine. Some quantities of overburden (soils, clay, and sand) may be used off-site as borrow by customers or outside building contractors.

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

Settling and/or sediment basins or ponds will either be drained and back-filled, or cleaned of accumulated sediment and allowed to remain on-site as open water areas.

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

Such on-site drainage ways if created or altered during the life of the mine will be constructed according to sound engineering practices with gradients and side slope configurations that can be maintained by vegetation.

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?

Reclaimed areas established concurrent with mining activities will be closely monitored and any necessary repairs implemented. Reclamation areas will be maintained through the use of annual maintenance fertilization and over-seeding, mowing, thinning, or burning as necessary according to standard agricultural or forestry practices. No areas will be released from the bonding requirement until DHEC and Wake Stone Corporation have jointly approved them.

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 overburden cut slope down to the top of the limestone will be established at 3H:1V and provided with vegetative cover concurrent with mine development. A 12' safety bench at the toe of the overburden cut slope will also be established concurrent with pit development. Buffers as noted on the Site Plan maps will provide adjacent properties protection from any slope stability concerns.

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.

Positive drainage will be provided for all water bodies in order to prevent stagnation. Given the existing nearly flat topography across the site, the planned development of 3H:1V overburden cut slopes down to the top of the limestone deposit, and the potentiometric surface of the Waccamaw/ Duplin aquifer as detailed in the Hydrogeologic Investigation, static water elevation in the final lake (which is projected to be approximately 850 acres) will be a approximately 3' to 4' below current surface grade. These conditions will provide for greater than 4' of water depth over the entire mined area. The only area that will have less than 4' of water depth will be along the 3H:1V overburden slope.

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

All building and structures will be removed from the site upon final reclamation. The only roads to remain on site will be the main site access roadway and a roadway encircling the entire reclaimed pit area.

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 shoreline 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 back filling.
 - 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 cannot proceed simultaneously with mining in these areas.

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.

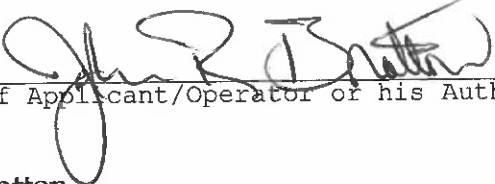
SCHEDULE FOR IMPLEMENTING CONSERVATION AND RECLAMATION PRACTICES

Conservation & Reclamation Practices	Segment # or Area	Planned		*Applied		Notes
		Amount	Year	Amount	Month/Year	
Overburden Placement	Block A&B		2019-2020			Continue overburden placement in depleted
& slope stabilization						portions of reserve Blocks A&B.
Construct elevated						
perimeter roadway	Block C		2019-2020			Flooding protection elevated roadway.
Remove overburden	Block C		2019-2020			Initial 200' wide perimeter stripping.
Construct Clay Curtain	Block C		2020			Groundwater cutoff curtain
Remove overburden	Block C		2020-2022			Strip overburden in Block C.
Continue Mining	Block A		2019-2023			Anticipated depletion 2023.
Continue OB placement	Blocks A&B		2020-2023			Concurrent with ongoing mining.
Active mining	Block C		2023-2028			
MODIFICATION 19-1 Approved by: <u><i>Julie E. Blalock</i></u> DATE: <u>8/12/19</u>						

* 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. Bratton
Printed Name of Applicant/Operator or his Authorized Representative

Chief Executive Officer
Title

7-15-2000
Date

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Department Use Only

Permit No. 1289 Date Application Approved 3/10/01 Date Bond Rec'd 3/8/01
Bond Amount \$161,000 Blanket or Single Bond Permit Issuance Date 3/10/01

ACTION TAKEN ON THIS RECLAMATION PLAN

 Approved Denied ☒ Approved with Additional Terms and Conditions

By: D. Craig Kennedy
ASSISTANT DIVISION DIRECTOR

Date: March 13, 2001