dhec	**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 Telephone Number: (803) 896-4261 Fax Number: (803) 896-4001**

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

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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."

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I. APPLICANT INFORMATION

1. Name of Company: Martin Marietta Materials, Inc.

2. Name of Proposed Mine: Martin Marietta Orangeburg Quarry County: Orangeburg

3. Home Office Address: 8451 Monticello Road (803) 779-6500
   (Street **and** P.O. Box) (Telephone No.)
   Columbia SC 29203 803 771-4200
   (City) (State) (Zip Code) (Fax No.)

4. Local Office Address: 951 County Line Road (843) 753-2132
   (Street **and** P.O. Box) (Telephone No.)
   Cross SC 29436 843 753-3998
   (City) (State) (Zip Code) (Fax No.)

5. Name of company personnel and their title to be the contact for official business and correspondence: Richard Broughton - Environmental Services Manager

6. Location of Mine: 951 County Line Road Cross
   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.

   All mining activity will take place on permitted lands that are bonded to be affected.

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

   Plant process water is treated by gravity settling in one of the mined out pits. Site drainage is diverted to one of the mined out pits. Fuel and bulk oil storage is in secondary containment. Groundwater monitoring wells have been installed to observe groundwater elevations.

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

   Cultural resource surveys were conducted in 2004 and 2017. No known cultural or historical sites exist within the permitted 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.

See Item #2. Quarry activity is not inherently harmful to wildlife. Fish and turtles flourish in the mined out pits. There are multiple pairs of bald eagles on the property. Wildlife is abundant in inactive portions of the property.

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.

Air Quality - Plant emissions are controlled by natural moisture content of the limestone. A water truck is used to control road emissions.
Water Quality - process water is contained on site, storm water drains to mined out pits. Mined out pits are used as clarification ponds to treat water prior to discharge.

III. RECLAMATION OF AFFECTED AREA

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

a. Lake or pond	☑	f. Grassland	☑
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.

All final slopes will be graded no steeper than 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 bringing 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 backfilling and grading to meet the requirements for final slope.

Overburden will be used to backfill some of the mined out pits back to natural elevations. Slopes around the perimeter of pits that remain as lakes will be graded and sloped 3:1 to top of rock.

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.

See the seeding schedule on the Reclamation Plan Map. Maintenance in the form of fertilizing and re-seeding will be done on an as needed basis.

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 exists for (a) acid rock drainage; (b) where the National Pollutant Discharge Elimination Systems (NPDES) Permit has discharge limitation parameters other than pH and Total Suspended Solids (TSS); (c) chemically treated tailings or stockpiles (excludes fertilizer or lime for revegetation purposes).

A closure plan is not required for this operation.

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.

Waste overburden, rock and minerals are used in building berms and backfilling mined out pits. Tailings, silts and slimes are allowed to gravity settle in mined out pits. Dumpsters are on site for trash and scrap steel. Used motor oil is recycled.

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

Mined out pits are used as settling ponds and should require no additional reclamation. Sediment ponds will be de-watered, graded level and vegetated.

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

There are no streams in the permitted area. Ditches will be designed for non critical flow. At end of mining, ditches will either be back filled, or sides will be sloped and vegetated.

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 been reclaimed will be inspected regularly to insure that vegetation has been successful. Deteriorated areas will be re-graded if necessary and re-vegetated as needed.

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,

Mined out areas that have not been backfilled will become lakes. Perimeter of these lakes will be graded 3:1 to top of rock. Earthen berms constructed for screening purposes will remain.

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.

Adequate drainage will be provided as needed to insure that noxious, odious or foul pools of water do not collect or remain on site. Existing mined out pits already contain 30 - 75 feet of water.

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, shop, and employee facility will remain on site. Roads will remain to provide access.

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 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.

The plant area will be utilized for the life of this operation. Certain mined out pits will be used for process water supply and settling, as well as overburden backfill areas for the life of the operation.

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	
Grading & Seeding	Pit 1	100%	2112			
Grading & Seeding	Pit 2	100%	2112			
Grading & Seeding	Pit 3	100%	2104			
Grading & Seeding	Pit 4	100%	2112			
Grading & Seeding	Western Pit	100%	2104			
Grading & Seeding	Southrn Pit	100%	2112			
Grading & Seeding	Plant Area	100%	2112			

* 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

Larry J. Roberts

Printed Name of Applicant/Operator or his Authorized Representative

President - Mid-Atlantic Division

Title

9/11/2018

Date

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: _____
DIVISION DIRECTOR

Date: _____