CASESTUDY

TRITON®
COASTAL & WATERWAY SYSTEMS

PLANT YATES RIVERBANK
WHITESBURG, GEORGIA

Application: The project involved armoring a total of 500 ft. of the Chattahoochee River along a power plant facility in Whitesburg, Georgia. Erosion of the riverbank jeopardized a containment dike for a settling pond.

The Challenge: Steep slopes along the riverbank allowed for very few revetment options. Permit restrictions would not allow fill materials to be placed in the river to create a flatter slope. And, the contractor was limited to repairing the existing slope and installing a revetment system.

Revetment options were limited on this riverbank's steep slope.

Site Conditions: A dam located upstream from the project site caused rapid changes to the water depth. At certain times of the year, it is not uncommon to see the water levels approach the very top of the riverbank. The mid-summer construction timing allowed the contractor on this venture to work during the low water period.

Alternative Solution: Ignoring the erosion on the riverbank was not an option. Given the proximity of the settling pond to the riverbank, serious environmental concerns were going to arise if the erosion were to progress much further than it already had. The project engineer, Gary McQuarter of Southern Company, considered articulating block mats and riprap as alternatives to the marine mattress system. The 1:1 (max) slopes prevented both of these options from being selected.

The Solution: The Triton® Marine Mattress System was selected as it combines many features that the alternative options did not; such as anchoring techniques, flexibility, large mass, porosity and the ability to promote vegetative establishment. The steep slopes proved to be a challenge that other revetment systems could not address within the confines of the permit.

PROJECT HIGHLIGHTS

Project:
Plant Yates Riverbank Protection

Location:
Whitesburg, Georgia

Installation:
Phase 1 – July 2001
Phase 2 – July 2002

Product/System:
Triton Marine Mattresses

Quantity:
100 Marine Mattresses; 15,000 sq. ft.

Owner/Developer:
Southern Company
Georgia Power Company

Design Engineer:
Southern Company

General Contractor:
Fluor Daniel

Materials Supplier:
Tensar International Corporation
(formerly Tensar Earth Technologies, Inc.)

Tensar INTERNATIONAL

RIVERBANK PROTECTION

CASESTUDY

A 30 ft. Triton Mattress is lifted to place along the river's edge .

With the Triton System, the contractor was able to place the mattresses on the prepared slope, extending 10 ft. of the mattress beyond the toe of the slope to serve as a scour apron. Temporary anchoring at the top of the slope held the mattresses in place during the initial installation process.

When all of the mattresses were in place, tails of UXTriton200 Geogrid were attached to the ends of the mattresses. The 20 ft. long geogrid tails were extended across the 16 ft. wide service and maintenance road, and were buried in an 18 in. x 18 in. trench. The trench was then backfilled with #57 gravel. J-hook anchors provided additional pull-out resistance to the buried geogrid. The service and maintenance road was then covered with a 12 in. layer of soil that protects the geogrid tails from vehicle traffic.

The Triton Systems Advantage: When the first phase of the project was completed everyone agreed that the Triton Mattresses were a good choice.

For several months after the installation, rainwater runoff carried sediment and silt from the area over the stone-filled marine mattresses, which later provided a suitable seed-bed for "volunteer" vegetation.

Within a year of the initial installation, vegetation covered a significant portion of the mattress protected riverbank.

When another section of the riverbank needed protection in 2002, the Southern Company and Georgia Power had no trouble choosing Triton Marine Mattresses again, mainly because of the "green" aesthetic treatment and "hard armor" revetment showcased in this project. Since then, other Georgia Power plants have also specified and used Triton Systems for various riverbank protection applications.

Additional Information and Services:

Tensar International Corporation, the leader in geosynthetic soil reinforcement, offers a number of integrated marine systems. Our products and technologies, backed by the most thorough quality assurance practices, are at the forefront of the industry. Highly adaptable, cost-effective and installation-friendly, they provide exceptional, long-term performance under the most demanding conditions. Our support services include site evaluation, design consulting and site construction assistance.

For innovative solutions to your engineering challenges, rely on the experience, resources and expertise that have set the industry standard for more than two decades.

Triton Mattresses now protect the riverbank from erosion.

For more information on the Triton Systems or other Tensar Site Solution Systems, call **800-TENSAR-1,** e-mail **info@tensarcorp.com** or visit **www.tensar-international.com.**

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