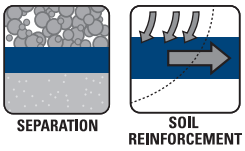
TENCATE Mirafi®



Case Study

application	Sludge Lagoon Closure
location	Axis, AL
product	Mirafi® HP770PET
job owner	OLT of Alabama, LLC
engineer	Environmental Strategies Consulting, LLC
contractor	Remediation Services, Inc

TenCate develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

THE CHALLENGE

The facility operated a wastewater treatment plant to manage waste produced from the rayon staple fibers manufacturing process. Environmental regulations now required closure of the two 500 ft. by 500 ft. wastewater treatment sludge lagoons. The capping system for the two waste treatment lagoons included deployment of a high strength geotextile, installation of a drainage layer to collect and convey sludge pore water back to the treatment plant, and the placement of fill to attain necessary grades and the construction of a cap and surface drainage system.

THE DESIGN

The designer selected a Mirafi® HP770 PET geotextile for support of the fill, placement equipment and for reinforcement of the final cap. This particular product has a high cross direction strength which allows for a competent seam. A series of test seams was performed with the equipment on site and submitted to a round of testing until a seam procedure was selected. Seam strengths of between 100lbs/in with a relatively light weight 207 nylon thread to as much as 300lbs/in for a seam consisting of 3 stitches of a heavier 277 thread. The waste treatment sludge was 14 to 17ft thick and so soft one could not even walk on it let alone drive earth moving equipment over it. The high strength geotextile was deployed over the course of 4 hours over 1ft of standing water using high strength ropes to pull the accordion folded geotextile across the lagoons. Drainage layer fill was placed with a John Deere 450H LGP with an operating weight of 16,500lbs and 4.0lbs/in^2 ground pressure.

Pre-construction picture of lagoon.

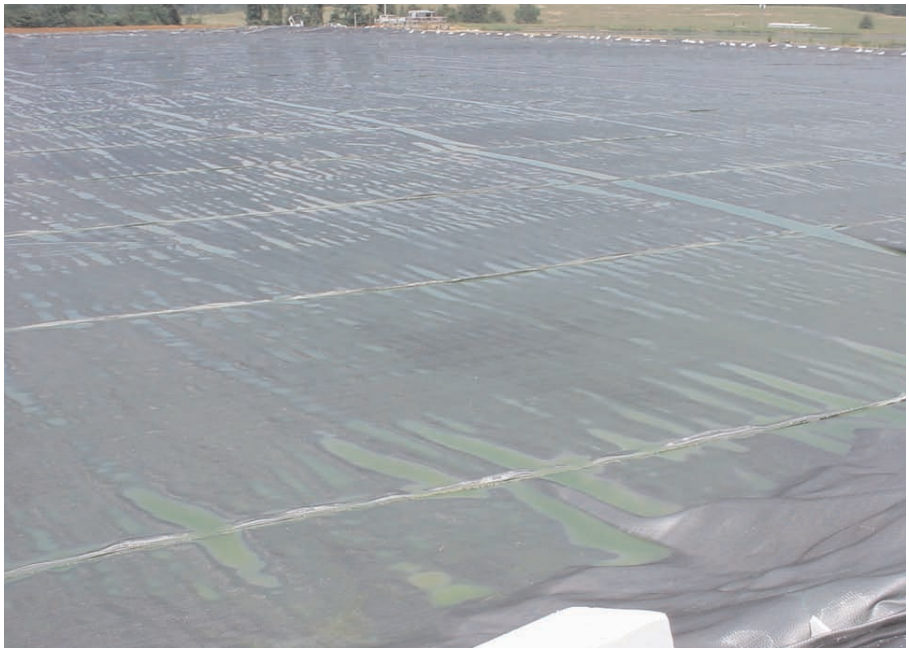
Deployment of approximately 75,000sy of Mirafi® HP770PET.

THE CONSTRUCTION

The geotextile for the first lagoon was deployed in late August, 2005 only weeks before Hurricane Katrina. The geotextile edges were keyed into the surrounding dike prior to the construction crew evacuating. The geotextile cover survived the hurricane. The Contractor remobilized after the hurricane to place the cover fill. The second lagoon is in process of being covered and should be completed by the end of July 2006.

THE PERFORMANCE

The solution was a cost effective cap allowing fill placement to proceed with earthwork equipment. The alternative would have been placement of fill using a conveyor system which would have been much more costly. The use of the high strength geotextile allowed for easy access to the lagoon for fill material, and will allow the site to be in environmental compliance for many years.



Deployed Mirafi® HP770PET with anchor trench in background.

Nearly completed cap without vegetation.

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