

Case Study

application	Subgrade Reinforcement Cap
location	Reinforcing Cap Chemical Waste Site, TN
product	Miragrid® 20XT

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

This site contained highly volatile chemicals dating back many, many years ago and utilized Miragrid® 20XT. The project, which covers about 15 acres (6.07ha) has trenches 12 ft (3.65 m) wide and differing depths of the highly volatile waste. Miragrid® 20XT was chosen to provide structural integrity to bridge these trenches. Several challenges existed at this site, one of which was the random locations of the trenches. Second, the exact type of highly volatile waste was uncharacterized due to health hazards. Third, the trenches had been grouted, backfilled, compacted and yet there was still some settling that has occurred over the years.

THE DESIGN

The design engineer looked at several options in designing the cap. TenCate offered the most efficient choice for installation because Miragrid® 20XT did not require any splicing or end-to-end connectors since Miragrid® 20XT rolls can be made to the length desired for easier installation. Also, TenCate offered truth tape, which is a highly visible white tape with black numbers in 1 ft (300 mm) increments to help denote roll length. This helped to make for easier installation by simply rolling out the material and spreading fill material over the geogrid.

THE CONSTRUCTION

The site engineering firm designed the cap to utilize a Uniaxial geogrid to provide structural stability over these trenches. The design included about 1 ft (300 mm) of fill material over the trenches, with the installation of Miragrid® 20XT. The geogrid was installed using an



Miragrid® 20XT was installed using an off-road vehicle to pull the geogrid over the cap.



1.1 million square feet of Miragrid® 20XT is being installed throughout the site.

off-road vehicle to pull the geogrid over the cap. An 8 in (200 mm) lift of number 57 stone was then compacted over the geogrid. There will be 2 to 12 ft (.6 to 3.65 m) of fill material over the geogrid and then another layer of geogrid for veneer reinforcement as well as a liner material to prevent migration of groundwater through the system.

THE PERFORMANCE

Miragrid[®] 20XT has proven to be more than sufficient in the Long Term Design Strength to provide structural integrity for the cap. The 1,120,000 ft² (104,000 m²) of geogrid is being installed on several different locations throughout the site. The subsidence reinforcement will aid in closing these caps as required by Federal Regulations.

TenCate[™] Geosynthetics North America assumes no liability for the accuracy or completeness of this information or for the ultimate use by the purchaser. TenCate[™] Geosynthetics North America disclaims any and all express, implied, or statutory standards, warranties or guarantees, including without limitation any implied warranty as to merchantability or fitness for a particular purpose or arising from a course of dealing or usage of trade as to any equipment, materials, or information furnished herewith. This document should not be construed as engineering advice.

Mirafi[®] is a registered trademark of Nicolon Corporation.

© 2010 TenCate Geosynthetics North America

0510

365 South Holland Drive Tel 800 685 9990 Fax 706 693 4400
Pendergrass, GA 30567 Tel 706 693 2226 www.mirafi.com




materials that make a difference