

BASIN 2 RELINE PROJECT, THOMPSON STATION, NASHVILLE, TN

Custom solutions for seamless wastewater basin relining



Industry: Waste
Application: Wastewater Treatment
Location: Nashville, TN
Product: **GSE®** HD Leak Location Liner®, **FABRINET®**, **Polylock®**

effective liner system solution. Littlejohn Engineering Associates designed the selected liner system to accommodate the site specific design considerations. One advantage of the High-Performance High-Density Polyethylene (HDPE) **GSE** Leak Location Conductive geomembranes is that it allows crews to Spark Test the

Overview

In the spring of 2012, Aeration Basin 2 at a town wastewater treatment plant, in Thompson's Station, was in need of repair. After considering several alternatives, the project team decided to reline the basin. Several factors made this project challenging.

Not only did the design and construction need to be completed as quickly as possible to ensure the basin would be fully operational before winter, but the Project Team would also have to reconstruct the new liner system within a confined area around the basins. In addition, it was critical that Basin 1 remain fully operational during construction since Basin 2 would be out of service.

Challenge

Sheaffer Wastewater Solutions LLC collaborated with American Environmental Group (AEG) Ltd and GSE Environmental, now known as Solmax, to develop a cost-

“From the very beginning of the project, Solmax’s experience and technical expertise were key success factors of this project. AEG and GSE proposed liner system alternatives based on critical success factors defined by our Project Team. We selected GSE Leak Location Liner so we could spark test the liner for leaks.”

Bruce Meyer, Sheaffer Wastewater Solutions, LLC

CASE STUDY

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Solmax fabricated the vacuum-formed polyethylene boot corners through their custom Fabrication Department. AEG then assembled and welded them together around the aerator base to form the protective enclosure.

Solution

Permits were secured quickly and the design phase was completed in June 2012. After completing the geosynthetic liner system ahead of schedule, AEG spark tested the geomembrane under visual observation from the Owner's onsite Quality Assurance Representative. Following aerator installation completion, AEG returned to the site and performed another spark test to confirm liner integrity before the basin was returned to service.

The Project Team chose to collaborate with AEG and Solmax because of their technical support services, professional qualifications, reputations for outstanding quality control, and safety consciousness. Upon hearing about the successful project completion, town board members thanked the project team and Basin 2 reopened before the end of the year.



entire surface of the liner in accordance with ASTM D 7240 or D 7007 to confirm the liner integrity. The high-quality, high-performance polymers ensure that the geomembrane is flexible without compromising its durability or strength, and the antioxidant package design provides superior oxidation protection from energy sources. In addition, **GSE Leak Location** Conductive liner will allow the owner to confirm liner integrity upon project completion. **FABRINET** geocomposite was also specified under the geomembrane for added protection.

Another challenge the project team faced was finding a way to protect the liner from direct contact with the wastewater treatment basin aerators. AEG and Solmax collaborated to propose a custom fabricated vacuum-formed polyethylene boot that would fit snugly around the aerator base, enclosing it to protect the liner.



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