

## The Challenge

Brookhaven National Laboratory was established in 1947 on Long Island in Upton, New York. Brookhaven is a multi-program national laboratory operated by Brookhaven Science Associates for the U.S. Department of Energy (DOE). Historically, nuclear physicists have studied the structure, characteristics, and behavior of the atomic nucleus and the nature of the nuclear force at the lab over the years. BNL researched what methods and technologies should be employed to process stored aerobic and anaerobic sludge at its on-site waste water plant which could meet the following requirements:

- Dewatering systems that allowed variable flow rate 100-400 gpm
- Utilize a two part coagulation and flocculation program
- pH adjustment of waste stream for metals precipitation
- Discharge of water meeting 35 mg/l TSS or less
- Containment of dewatered solids for sampling and profiling
- Containment that would protect solids from rewetting during storage
- Dewatering capable of achieving 35% dry solids or greater



**Application:**  
 » Wastewater Treatment Plant Sludge Dewatering & Metals Reduction

**Location:**  
 » Upton, New York

**Technology:**  
 » Smartfeed™ Chemical Conditioning  
 » Geotube® Engineered Structures

**Geotube® Distributor:**  
 » Mineral Processing Services

**Contractor:**  
 » Brookhaven National Labs

**Polymer Vendor:**  
 » Ashland

## The Solution

BNL reviewed many technologies and found TenCate Geotube® engineered textiles with Smartfeed™ chemical conditioning had the capability to meet project goals.

BNL project manager William Chaloupka, PhD was impressed with how closely the filtration testing of the sludge, using Rapid Dewatering

SmartFeed™ is a patent-pending technology of

## Mineral Processing Services, LLC

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Test (RDT) and Pressure-Geotube® Dewatering Test (P-GDT), characterized full scale operation. The sludge was pumped by BNL-owned equipment and operators using a 6" centrifugal pump to convey sludge through hard piping to Smartfeed™ trailer. The SmartFeed™ filtration manager monitored ph and chemical dose operation with parameters resulting from pilot testing programmed in to the SmartFeed™ trailer. Geotube® containers were installed in existing sand filter beds with 6" piping fed from the SmartFeed™ processing trailer. Project parameters were monitored using a computer interface allowing optimization by filtration manager throughout the project. The SmartFeed™ data management software provided daily reports for project benchmarking.



### Customer Comments



line to manage the solids for final disposal."

"Our experience with the Geotube® distributor's filtration manager to work with project members in helping to create a game plan as the project progressed was invaluable.

"The dewatering process met our expectations for metals reduction and water quality discharge.

"Having the dewatered sludge in a textile container protected from rain and wind provides our group an acceptable time

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