

The Challenge

The media-filter backwash basins at the Town of Braintree, Mass. Water Treatment Plant were filling to capacity. The plant manager investigated several methods of removing alum sludge from the basins, and found large cost variables among pumping, dewatering and disposal methods. The town's hired consultant reviewed mechanical and Geotube® engineered textiles for dewatering and disposal of sludge on a bone-dry-weight basis.

The Solution

The town's consultant pilot-tested Geotube® containers and found, with SmartFeed™ chemical conditioning, this technology provided the highest economy by volume for reduction of sludge.

The town engineer designed a lay-down area based on the size of Geotube® containers needed for one year's estimated volume of alum sludge wasting. The lay-down pad's designed elevation allowed for collection of filtrate,



which drained back to the head works of the settling basins.

A hydrant and electrical power disconnect were installed near the lay-down pad for SmartFeed™ chemical conditioning equipment needs.

A bi-annual schedule was proposed by the consultant; a SmartFeed™ processing trailer would be shipped to the plant, connected in one day to the provided utilities, and be ready to receive sludge the following day from the basin pumping operation.

Application:

» Alum Sludge Processing
From Storage Basins

Location:

» Braintree, MA

Technology:

» SmartFeed™ Chemical Conditioning
» Geotube® Engineered Containers

Engineer:

» Beta Group, Inc

Geotube® Distributor:

» Mineral Processing Services

Contractor:

» Town of Braintree
Water Treatment Plant

Polymer:

» Aries Chemical

SmartFeed™ is a patent-pending technology of

Mineral Processing Services, LLC

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The town purchased Geotube® containers and installed interconnecting pipe manifolds, allowing several tubes to receive flow. Sludge pumping, using the town's excavator for mixing and movement of portable centrifuge pump, provided flow rates of 300-800 gpm, with slurry solids of 1-6 percent, containing sludge with rocks, sticks and leaves.

The SmartFeed® technology maintained necessary dosage rates and daily project data acquisition without upset, resulting in filtrate capture rates of 24 NTUs discharging to the basin head works, and cake solids achieving 34 percent dry solids after several weeks of drainage.

Customer Comments

"I found the daily process benchmarking provided by the SmartFeed™ system, with on-site support of Mineral Processing Services' filtration manager, invaluable in making daily decisions about our pumping methods. The SmartFeed™ process and Geotube® containers allowed us to pump our holding basins at whatever flow rate and percent solids we could achieve without causing upset to the filtrate quality. I look forward, in a few months, to the SmartFeed™ system again filling the Geotube® containers in half the time, with various pumping methods, resulting in more savings for our operations budget!"



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