

Geotube® Dewatering Technology Helps Arizona Chemical Solve “Tight Space” Challenge

Specially sized Geotube® dewatering units help company remove inorganic compounds from EQ basin—and reduced dewatering costs 38%.

Arizona Chemical Company, a Division of International Paper, converts terpenes, generated by cooking wood pulp for making paper, into resins used to make adhesives. The plant’s process waste of inorganic compounds (magnesium hydroxide, crude tall oil and fatty acids) is sent to an equalization basin (EQ) for storage and settling. The supernatant is discharged into Panama City’s wastewater treatment system.

About once a year, the solids in the EQ basin have to be removed. In past years, mobile belt presses were brought in to dewater the sludge. Due to the nature of the sludge, throughput on the belt presses was slow and the process very expensive. The sludge is heavy and sticky, clogging belt openings and reducing the effectiveness of the process. Furthermore, due to limited operation space at the site, the belt press process created congestion that could interfere with plant operation.

TenCate develops and produces materials that function to increase performance, reduce cost, and deliver measurable results by working with our customers to provide advanced solutions. For this project, TenCate Geotube dewatering technology provided the answer.

Smith Industrial Service (SIS) contracts with Arizona Chemical Company for routine industrial cleaning services. SIS had also cleaned the EQ basin, but realized it was necessary to find a more efficient method to contain and dewater the solids than the belt press process. The President of SIS, Chris Smith, introduced Geotube® dewatering technology to the Terpene/Resin Superintendent at the plant as an alternative technology that could handle the volume of dewatering necessary and do it within the limited space available.



By using custom-sized Geotube® containers designed to fit into open spaces available on the job site, Arizona Chemical was able to dewater more than 1,000 tons of sludge in less than two weeks. This is half the time of other dewatering methods, plus it was 38% more cost-efficient.

A pilot project was conducted to prove that the chemically conditioned sludge would dewater and consolidate in Geotube® containers. The success of this project led to the expansion of Geotube® dewatering technology for the entire dewatering job.

TenCate Geotube manufactured Geotube® units in special sizes to exactly fit the limited space in the terpene tank farm containment area. In the first phase of the project, three Geotube® containers were filled with sludge over four days. A week later, the containers were cut open and the dewatered solids hauled to the local landfill.

Three more Geotube® dewatering containers were then deployed and filled, completing the basin cleanout. A total of 1,065 tons of dewatered solids were removed without disrupting plant operations.

A “Go-Devil” was used to mix the solids in the EQ basin for more consistency. The sludge was then pumped from the basin through a polymer station, where polymer was added to the mixture to enhance floccing. Then the

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mixture was pumped into the Geotube® units, where water drained and was collected.

After the dewatering process was completed, the Geotube® container was cut open, and the dewatered cake solids were easily collected using a front end loader and hauled to a landfill.

Using Geotube® dewatering technology created a clean operation with high solids and excellent effluent. The project was completed in several days. The effluent was recirculated to the EQ basin without additional treatment.

The dewatered cake solids from Geotube® dewatering technology far exceeded any other form of dewatering previously utilized. This

increase in efficiency saved Arizona Chemical 38% over belt press dewatering—plus a 50% reduction in time to complete the job. There were also savings in disposal costs. Because the dewatering efficiency was so much greater and the cake solids drier, there was a 40% reduction in disposal costs.



The simplicity and the speed of the operation means that the facility can easily repeat the operation with Geotube® dewatering technology as EQ basin cleanout again becomes necessary.

To learn more about Geotube® dewatering technology, visit www.geotube.com.

How Geotube® Dewatering Technology Works

Dewatering with Geotube® technology is a three-step process.

In the **confinement** stage, the Geotube® container is filled with dredged waste materials. The Geotube® container's unique fabric confines the fine grains of the material.

In the **dewatering** phase, excess water simply drains from the Geotube® container. The decanted water is often of a quality that can be reused or returned for processing or to native waterways without additional treatment.

In the final phase, **consolidation**, the solids continue to densify due to desiccation as residual water vapor escapes through the fabric. Volume reduction can be as high as 90 percent.



"Go-Devil" Mixer



Polymer mixing station



Dewatering flow



Solids ready for removal to landfill



Step 1: Filling



Step 2: Dewatering



Step 3: Consolidation

Geotube® is a registered trademark of TenCate Geosynthetics North America

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