

Geotube® Dewatering Technology Unclogs Queen's Creek and the Queens Lake Marina Waterways

Dredging contractor uses cost effective and innovative dewatering technology to contain and dewater marine sediments.

A build-up of organics, sediments, very fine silt and clay created a major navigational problem for members of the Queens Lake Marina Association, in York County, VA. A contract was issued to dredge and dewater sediments in the boat slips and outside the enclosed slip area. Site preparation, permitting, transportation, and disposal were handled by the Marina Association. The filling and consolidation phase took place over a two-week period. Dredging/pumping was approximately 1,500 gpm at an average feed solids concentration of 6% - 8%.



The filling and consolidation phase of the Geotube® containers took place over a two-week period.



The Marina parking lot was used to construct a dewatering cell. The site was graded flat and #57 stone was placed for drainage under the Geotube® units. 60" circumference tubes are rolled onto steel cores for shipping and deployment on the site.

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. The unique high volume, low cost Geotube® dewatering system, provides a very effective way of dewatering marine sediments.



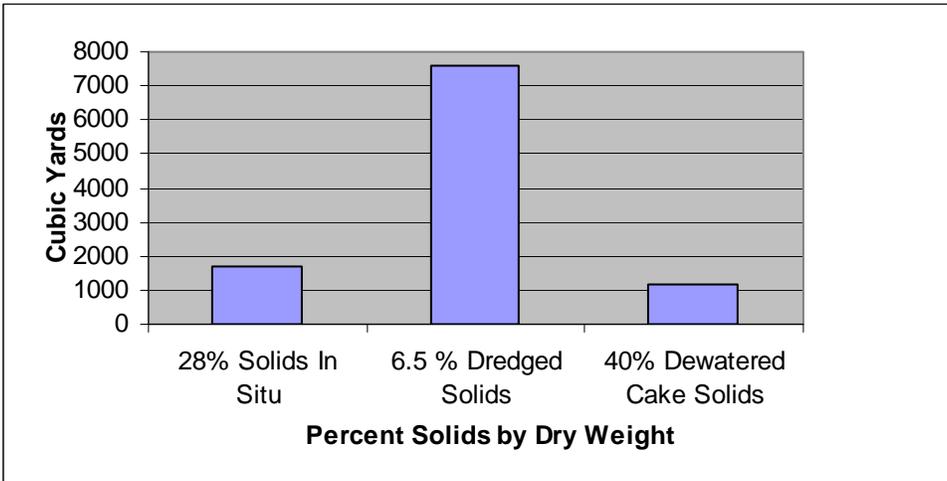
An Ellicott auger dredge was used to dredge the sediments in the waterway and in the boat slips.



Watersolve's WSLP-2400 Polymer System made down and activated Solve 9330 emulsion polymer at 0.5% concentration. Onsite confirmation of the previously identified chemical conditioning program confirmed 166-ppm Solve 9330 for full-scale operations. A good, tight floc was achieved inline with release of clear filtrate. Clear filtrate from the dewatering Geotube® units flowed back into the river. Polymer usage was in line with original usage estimates of 3 to 5 lbs of polymer per dry ton of sediment.



This project was started in November '07 and dredging was completed within two weeks. The Geotube® units were pumped to the maximum allowable height of 7.5', allowed to dewater and consolidate and then pumped to the maximum 7.5' height again. The material was left in the Geotube® containers through the winter. The dredged sediments continued to desiccate over the winter and were successfully transported off-site.



The homeowners association was pleased with the performance of the Geotube® containers, the Watersolve polymer (Solve 9330) the make-down system, and the dredging work of Ray Normes Dredging. For further information contact: Hank Gerhart at Queens Lake Marina Association (757) 229-0420, Ray Normes (410) 641-

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.



Step 1: Filling



Step 2: Dewatering



Step 3: Consolidation

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