

## Silt Removal And Pump Station Design: Two Keys To Improving Water Quality And Protecting Irrigation Assets

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### The Problem

The Stone Mountain Golf Club is a 36-hole facility managed by Marriott Golf located 16 miles from Atlanta, Ga. The property endured record drought and heat in 2007 and 2008 then experienced a historic flood in September 2009. The existing irrigation system pump stations were flooded, and the original pump intakes were covered with over 4 feet of silt – causing serious problems with irrigation water quality and pump efficiency.

### The Solution

In order to meet the financial and agronomic needs of the property, a hydraulic dredge was used to remove the silt covering the irrigation pump intakes. Geotube® systems were used to dewater the silt before it was used for several back-fill projects throughout the property. Meanwhile, a state-of-the-art pump station project was approved and included:

- The 20-inch main line was bored under the shoreline to protect buffer areas and allow intakes to emerge in deeper, cleaner water. The main line and intake screens are designed to be extendable if another flood causes silt buildup.
- The multimillion dollar expense of removing all of the silt was averted.
- The new pump station was built at an elevation 5 feet above the 1,000-year flood mark.
- The trees that were displaced by the project were replaced in the landscape of the new site.
- The soil and silt that was removed was reused for several projects including establishing an Operation Pollinator research site to provide habitat for bees, butterflies and other pollinators.

### The Results

This project had many complex parts that impacted the short- and long-term future of the property. It was successful, in large part, with help from the existing Best Management Plan for Water Conservation which identified the need for an upgraded pump station and aggressive silt management before the flood. It is never too soon to start a great plan. The combined actions within our BMPs have saved over 150-million gallons of water since 2006.

