

NEWS RELEASE

Florida DOT Road Widening Project Uses Innovative Construction Site Water Clarification System for Dewatering Operations

Construction site dewatering is not a new phenomenon. However, over the last decade, water resource management, at nearly every level, has become an extremely high-profile environmental issue. In particular, the protection of lakes, streams and estuaries are becoming a greater concern as the conversion of surrounding land into commercial and residential habitats continue to creep closer these delicate water ecosystems.

But, what's good for the environment is not always good for the contractor. Because today, not only does the water have to be removed, it now has to be clarified before it can be discharged. This adds time, cost, and in many cases, aggravation to nearly every major construction project located in these sensitive areas. That is why it has become paramount for the contractor to take the right steps to properly remove and treat the groundwater.

A recently completed highway expansion project along a section of I-75 in Florida is a prime example of the right way to dewater a site located close to a body of water designated as an OFW (Outstanding Florida Water), by The Florida Department of Environmental Protection.

The water clarity criteria established, by the Florida DEP for this particular Florida DOT project, stated the maximum allowable turbidity level of the discharged water could not exceed 29 NTU above background, which in this case was 5 NTU. Pre-construction water clarity test results indicated the untreated water from the site was ranging from 100 to 950 NTU. It was apparent the contractor had his work cut out for him.

At this point, the contractor contacted R.H. Moore & Associates, a local distributor of erosion control and soil stabilization products, and asked them to come up with a solution. After assessing the situation, the company proposed a portable, above ground, water clarification "treatment channel" to bring the site's turbid groundwater into compliance.

First, a 1,400' trapezoidal-shaped ditch/channel lining system, called SmartDitch, was assembled along the roadside near the source of the water runoff. Each channel section was 9' long and attached, at each gasketed joint, with removable screws. Once assembled, the 18" deep x 48" wide channel would be able to handle up to 13.5" of water, at velocity of nearly 10 *fps* at a 5% slope. Then Floc

Logs, designed to remove the fine particles and reduce NTU values, were placed every 9' inside the SmartDitch channel. At the end of this clarification channel, approximately 100' of all-natural woven, biodegradable Jute Matting was laid on top of construction film to further capture loose particles and fine sediment.

Once in place, submersible pumps and hoses were engaged at the upstream end, to extract and direct the turbid groundwater through the channel for clarification. Due to the high groundwater in this particular area, and frequent storm events, the contractor ran the dewatering/clarification system 12 hours per day.

DEP inspectors then tested the water daily; to make sure the contractor was meeting the water clarity criteria. "Without a doubt, this system saved the contractor time and money," stated Jeff Peterson, an R.H. Moore Engineer, "With out this system in place, even the most environmentally conscious contractor could not stayed in compliance, and would have paid extensive fines," concluded Peterson.

Water Clarifying System is Portable, Reusable and easy to Maintain

To keep the clarification channel running efficiently, 1-2 hours of maintenance a day is required. Although the Jute Mats need to be replaced daily, the Floc Logs will last up to a month, and the UV-resistant HDPE channel liner can be reused countless times. So at a project's completion, the channel can be disassembled, stacked onto a couple of pallets and transported to the next dewatering site.

Side Bar:

In all, the Florida Department of Environmental Protection has given -- 41 of its 1700 rivers, several lakes and chains, a hand-full of estuarine areas, and the entire Florida Keys region -- the designation of "Outstanding Florida Waters" (OFW). Bottom line? They are now protected because of their natural attributes, and their current state of "good" water quality is not to be downgraded. Therefore, any water runoff coming from a construction site, including groundwater and stormwater, must be treated before it can be safely discharged back into the area.

Photos & Captions:



Sections of the thermoformed HDPE SmartDitch liner are being assembled to create a water clarification channel for construction site dewatering.



Turbid groundwater is being removed and clarified from the construction site. Floc Logs are placed every 9' within the channel.



Downstream, at the end of the clarification channel, the water is filtered once again as it makes a final pass through Jute Matting before it is discharged



Test samples of the groundwater before and after it passed through the 700' clarification channel. The turbidity in this water was reduced from more than 350 NTU to less than 29 NTU.