ALGAE SLUDGE FROM DAF TO GEOTEXTILE TUBES

OHIO, USA

OVERVIEW

This municipality needed to remove the algae from the water entering the creek as it exited the lagoon wastewater system. They installed a DAF (Dissolved Air Floatation) unit and wanted to dewater the algae sludge that the DAF was skimming. A pilot study was performed and went full scale with the Geotube® system to collect, store, and dewater the algae sludge.

OBJECTIVE

The DAF unit was successfully removing the algae sludge. The problem was that they were putting the sludge back into lagoon # 1. WaterSolve was called in to recommend a pilot study to prove the performance of dewatering the algae sludge collected by the DAF in a Geotube® trial. If the sludge was collected and dewatered properly it would reduce the volume of solids filling lagoon #1.

GEOTUBE® CONTAINER SIZING

Geotube® containers manufactured from high-strength polypropylene fabric are designed to allow effluent water to escape through the pores of the fabric while retaining the chemically-conditioned solids. An MDS (Mobile Dewatering System) Geotube® was used in this pilot to determine if the process would work and determine the volume of solids collected over a weeks time of operation. It had a capacity of 25 cubic yards. After the pilot study, it was determined that a 30 ft. circumference by 50 ft. long tube with a capacity of 100 cubic yards would hold 90 to 100 days of the algae sludge.

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APPLICATIONS & PRODUCTS
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PILOT STUDY

THE RESULT

In the seven days of the pilot study, it was determined the Geotube® would perform very well and was a very easy way to collect and dewater the algae sludge. The operator immediately ordered the 30 ft. circumference by 50 ft. long tube for the fall season of operation. The DAF operated at 790-gpm and could discharge nearly a million gallons daily. A dewatering containment pad was built to collect the filtrate and pump it back into the lagoon treatment system. The dewatered sludge came to about 1 cubic yard daily. The chemical treatment in the DAF was ferric chloride followed by a flocculent. There was no further treatment needed as a diaphragm pump was used to transfer the sludge with minimal shearing of the flocculent. The end result was found to be a simple and cost-effective process to collect the and dewater the algae sludge.

DAF (Dissolved Air Floatation) Unit

This DAF operates at 790-gpm and uses ferric chloride and a flocculent to collect the algae sludge.

Collection of Algae Sludge

The algae sludge as it is collected by the DAF unit

Pumping Algae Sludge to Geotube®

A diaphragm pump sends the sludge to the Geotube®.

References available upon request.
Contact WaterSolve Sales for Info.
(616) 575-8693

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