

Cleaning the Ra'anana WWTP using Geotube® Technology



The Challenge

The Ra'anana WWTP was established in 1999 and since then has collected sewage from Ra'anana and the surrounding vicinity. The sewage that comes in to the plant via the municipal sewage system flows to the primary sedimentation pool.

A large amount of sludge accumulated on the bottom of the regulator pool, which caused severe odor hazards in the vicinity.

The Solution

After monitoring the source of the stench in the area, a decision was taken to clean the sedimented sludge from the bottom of the regulator pool and to reduce the volume thereof.

Cleaning the regulator pool of sludge was effected with a combination of two technologies offered by Admir Environment:

- ◆ Pumping out the sediment using a DREDGER.
- ◆ Dewatering the sludge using Geotube® system.



The Execution

Cleaning the regulator pool at the WWTP was carried out in a number of stages:

- ◆ A temporary secondary containment system made of H.D.P.E mats welded together was set up for the Geotube® containers.
- ◆ Dredging the sediment from the bottom of the pool into the Geotubes using a dredger with a 250 cu. m. per hour pumping rate.
- ◆ Adding polymers and mixing them into the sludge.
Adding the polymers causes flocculation that facilitates the filtering process.



- ◆ The filtered water flowed through the Geotube® system back to the sedimentation pool without the need for additional treatment.
- ◆ In order to achieve the best dewatering results, the Geotube® sleeves containing the sludge were left in a secondary containment system for a further period of time, in order to allow additional dewatering by means of the self weight of the sludge, through the consolidation process and thus to additionally reduce the volume of the sludge designated for removal from the site.

The Results

- ◆ In accordance with the requirements laid down upon the commencement of the project, the entire course of the work was to be carried out without interference with the ongoing operation of the wastewater treatment plant and without causing odor hazards.
- ◆ The pumping process from the regulating pool was completed after about 30 days of operation. Some 2,500 cu meters of sludge, in total, at a concentration of about 7% solids, were pumped out.

Sludge Drying Progress over Time:

Percentage Solids in the Sludge			
TS 105°	% solids on the bottom while pumping	% solids in the Geotube® upon completion of the pumping	% solids in the Geotube® after a month
	7%	23%	53%

- ◆ **Customer - Ra'anana's Waters LTD**
- ◆ **Designer - Tzipi Elroy, Tahal Consulting Engineers LTD.**
- ◆ **Supervision - Alex Guttman**
- ◆ **Execution - Admir Environment, 2012**

Secondary containment system



DREDGER



Geotube®

