

## Lagoon Dewatering Solutions Case Study: The Municipality of Arran-Elderslie

The Municipality of Arran-Elderslie operates three sewage lagoons, located in the town of Chesley, Ontario. In 2009, the Municipality sought a solution for cleaning up the newest of the towns three lagoons, for the first time in it's twenty five year history.

Having used mechanical methods to clean its lagoons in the past, the Municipality wanted a solution which was effective, low cost, odorless and would work with the limited footprint available. After evaluating several options they chose Bishop Water Technologies to undertake the lagoon cleanup project, using Geotube<sup>®</sup> dewatering containers.

Geotube<sup>®</sup> containers are constructed of a special woven polypropylene material which is extremely efficient at retaining solids and producing a clear, cleaner effluent. The Geotube<sup>®</sup> is basically a large dewatering bag which retains a high percent of solids while dispersing a clear effluent.

In August of 2009, and in partnership with Geo-Dredging and Dewatering Solutions Inc, the lagoon cleanup using the Geotube<sup>®</sup> dewatering technology commenced.

A temporary dewatering cell consisting of a geo-membrane and crushed stone was constructed along the edge of the lagoon. The dewatering cell was constructed to allow clear filtrate dispersing from the tubes to be directed via gravity back into the lagoon. Six Geotube<sup>®</sup> units measuring thirty feet in circumference by one hundred feet in length were brought on site to dewater and contain the lagoon sludge.

A dredge was used to blend the sludge in the lagoon, and transfer it to the Geotube<sup>®</sup> units. Sludge was



*In August 2009, Six Geotube<sup>®</sup> units were used to dewater and contain sludge pumped from one of the three sewage lagoons operated by The Municipality of Arran-Elderslie.*

pumped through a mobile PVC mixing chamber where it was injected inline with polymer. The injection of polymer creates a flocculation in the sludge, causing the solids to bind together and separate from the liquid.

Crews were onsite for seven days, during that time approximately one hundred and ten dry tons of solids were contained by the Geotube<sup>®</sup> technology.

Grab samples of dewatered solids indicated that the sludge which had been pumped from the lagoon at about 3%, had dewatered to 31.6% solids over the eight day period.

Arran-Elderslie Water Works Manager, Scott McLeod immediately identified benefits of the Geotube<sup>®</sup> technology, he said, the process "builds capacity in the lagoon." In addition, instead of trucking sludge at 98% water "we'll be trucking solid sludge, and at a time when the farmer really needs it, not when we want to get rid of it."

Mayor Ron Oswald added "We are really pleased with the results."

Not only was the Township pleased with the results of the project but also the cost savings they realized through choosing the Geotube<sup>®</sup> dewatering technology. The total project was about one third cheaper than methods they had used in the past.

Every lagoon cleanout is unique, with each presenting a different set of challenges. Lowering transportation costs, on site storage, reducing odor, retention of valuable solids, quick mobilization and meeting stringent environmental protocols are just a few. The Geotube<sup>®</sup> dewatering technology is the only dewatering technology that provides a solution to all these challenges and does so with simplicity and affordability.

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