

GCL used in raw water storage reservoir to restore walleye habitat

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PROJECT DETAILS

Fremont Raw Water Storage Reservoir

LOCATION

Fremont, Ohio, USA

PRODUCTS USED

BENTOMAT® DN GCL

BENTOMAT® 200R GCL

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CHALLENGE:

The soil at the site was porous karst soil, which is not conducive to liquid containment. Also, there was extreme hydraulic head due to the deep depths of the reservoir.

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SOLUTION:

In lieu of trucking in clay for a compacted clay liner, the engineer chose to use a geosynthetic clay liner (GCL). Moreover, a composite liner system was selected due to the depths of the reservoir. This also assured that any leaks in the geomembrane would be backed up by the GCL. A 40 mil linear low-density polyethylene (LLDPE) textured liner over a BENTOMAT® DN GCL was used on the slopes and a 40 mil LLDPE smooth liner over a BENTOMAT® 200R GCL was used on the base to reduce cost. In addition to supplying the geosynthetic clay liner, CETCO provided engineering support to ensure that the project stayed on budget, while meeting performance expectations.

RESULT:

The use of a GCL reduced the number of truckloads of material that were required to line the surface area of the reservoir, providing an enormous transportation cost savings over trucking in clay. After the project is complete, the Ballville dam can be removed and is expected to restore the fish spawning habitat in the Sandusky River and bring tourism back to the area. In addition, the reservoir will provide a quality water supply.