

Job Spotlight

The goals of the Talbot County project included providing a reliable and cost effective wastewater treatment plant that met the county's needs and water quality objectives while also minimizing facility operations and maintenance costs. These objectives were met through equipment selection and process configuration, including the use of precast post-tensioned structures.

TALBOT CO. PROJECT ST. MICHAEL'S, MD

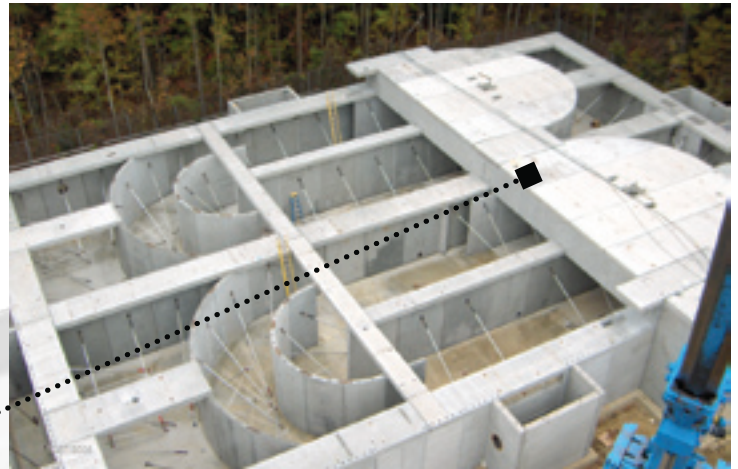
The precast post-tensioned concrete structures; a large Oxidation Ditch tank, two circular Clarifier tanks, joined by a pump gallery, and a circular Equalization tank, provide a highly durable and cost effective solution for the wastewater treatment plant. The unusual shape of the Oxidation Ditch tank would be virtually impossible to build using steel, an earthen basin, or any other type of construction.

The Talbot Co. project was the first Oxidation Ditch utilizing EIMCO Water Technologies process equipment and precast prestressed concrete construction. The combination of straight walls, curved walls, and an elevated equipment deck presented new challenges for the tank designers. Using a totally encapsulated unbonded tendon design, the curved portion of the tank walls are restrained with continuous horizontal tendons within the wall panels. In addition to the circumferential tendons, the straight portions of the tank walls are also restrained by two upper fixed precast post-tensioned concrete beams, which span across the width of the tank.



while meeting all of the structural requirements of the American Concrete Institute. The tanks foundation slabs consist of conventionally reinforced 4,500-psi cast-in-place concrete. Approximately 900 cubic yards of concrete were placed and finished on-site. Early morning monolithic pours cut down on the total number of pours required, which better served the on-site access needs.

The simultaneous fabrication of the cast-in-place base slab on-site, and the precast panels off-site, reduced the project schedule by months. Scheduling was a primary concern. The precast prestressed tanks were installed in an existing wastewater treatment plant with limited access and working area options. The wastewater treatment plant continued in operation throughout construction with supply trucks, sludge hauling trucks and our delivery



PROJECT FACTS:

- Total Number of precast pieces: 212
- Cubic yards of precast concrete for the walls and upper slabs: 656 cubic yards
- Pounds of rebar: 242,500 lbs
- Feet of post-tensioning strand: 14,450 feet
- Number of weeks to produce precast tanks: 11 weeks
- Number of set days for precast erection: 7 days

trucks all sharing the same access. Each tank was built in a timed sequence as needed to accommodate the excavation of underground pipe.

Ultimately the project was a great success for Dutchland, Inc., the contractor, and the owner.