
Aquia WWTF Upgrade Stafford County, VA



Project: Secondary anoxic tank, influent pump station, filter pump station

Date Completed: November 2010

On-site Construction Duration: 33 weeks

Cubic Yards Concrete: 2,161 cy

Description: Upgrades to the Aquia WWTF were needed to meet more stringent nutrient removal requirements of the Chesapeake Bay Act. In addition, the plant needed to expand the design capacity from 6.5 MGD to 10 MGD in accordance with 20 year growth projections.

Solution: Dutchland built a rectangular precast post-tensioned tank that included three denitrification tanks between biological treatment trains and secondary clarifiers. The footprint of the structure measures 148' 10" wide by 143' 8" long and is sized for a 12 MGD flow. The precast tank is built on a rammed aggregate pier deep foundation which allowed for an 8" membrane slab. Dutchland was able to realize considerable savings for Stafford County over cast-in-place concrete with the precast post-tensioned technology. The tank is built to ACI 350 Code and includes 18-ft wall panels that are 10-inches thick.