

Cauley Creek Water Reclamation Facility

Application: Wastewater Reuse

Capacity: 5.0 MGD (18,930 m³/d)

Location: Fulton County, Georgia, United States

Commissioned:

Phase I: April 2002 2.5 MGD (9,460 m³/d) ;

Phase II: April 2004 2.5 MGD (9,460 m³/d) expansion



The Problem

Fulton County's existing wastewater treatment plant in the Johns Creek basin was nearing its design capacity, and could not handle any additional sewage flows from new developments in the area. To compound the problem, a lack of rainfall and drought-like conditions had many commercial developments concerned that limits would be placed on the amount of water that could be drawn from the Chattahoochee River for irrigation purposes.

The Solution

A unique proposal was submitted to the Fulton County Board, which outlined the development of a privately owned water reuse facility. However, the recommended location for the facility was in the center of an exclusive housing community, with

homes in the range of \$350,000 to \$1,500,000 US. The local residents had many concerns about the proximity of the wastewater treatment plant to their homes and feared decreasing property values, odor and noise. The facility developer held regular meetings with the community to educate them about the water reclamation facility and to address their concerns.

In April 2002, the Cauley Creek Water Reuse Facility (Phase I) was commissioned. This ZeeWeed* MBR (membrane bioreactor) plant, supplied by ZENON Membrane Solutions, part of GE Water & Process Technologies, was the first of its kind in the state, and was designed to treat an average day wastewater flow of 2.5 MGD (9,460 m³/d). In October of 2002, the Fulton County Board of Commissioners approved the expansion of the plant to 5.0 MGD (18,930 m³/d).

In April 2004, the Phase II facility was commissioned. This expansion increased the capacity to 5.0 MGD (18,930 m³/d) and incorporated the following upgrades: biological phosphorus removal to minimize chemical consumption; mixed liquor surface wasting to minimize scum and foam in the aerobic zones; and a ZeeWeed sludge thickener to minimize the aerobic digester volume.

Treated effluent from the reuse facility surpasses tertiary standards, and is provided to local golf courses, sub-divisions, schools and churches for irrigation purposes, thereby reducing the amount of water drawn from the Chattahoochee River. During the wet weather season, when irrigation water is not required, effluent quality exceeds all state requirements for discharge directly to the River. The Cauley Creek Water Reclamation Plant received the state's first cold weather discharge permit for a privately owned plant.

The facility was designed to resemble a dairy barn, complete with a white picket fence, a rooster weather vane, and life-size plastic cows to blend with the surrounding agricultural area.



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