OMNIFLO® SBR Installation at Water Reclamation Facility

Big Flat Creek Water Reclamation Facility

At the Big Flat Creek Water Reclamation Facility located in Loganville, Georgia, a two-tank OMNIFLO® Sequencing Batch Reactor (SBR) is installed from Siemens Water Technologies. The OMNIFLO® SBR is a fill-and-draw, non-steady state activated sludge process in which one or more reactor basins are filled with wastewater during a discrete time period, and then operated in a batch treatment mode. The SBR process accomplishes equalization, aeration, and clarification in a timed sequence, in a single reactor basin. The SBR provides the Loganville facility in meeting criteria for stream discharge and enhances treatment for land application of the wastewater. According to the Director of Water Quality, Chris Yancey, "The OMNIFLO® SBR includes a control system that offers the flexibility to manager the wastewater treatment process with efficiency and very little maintenance."

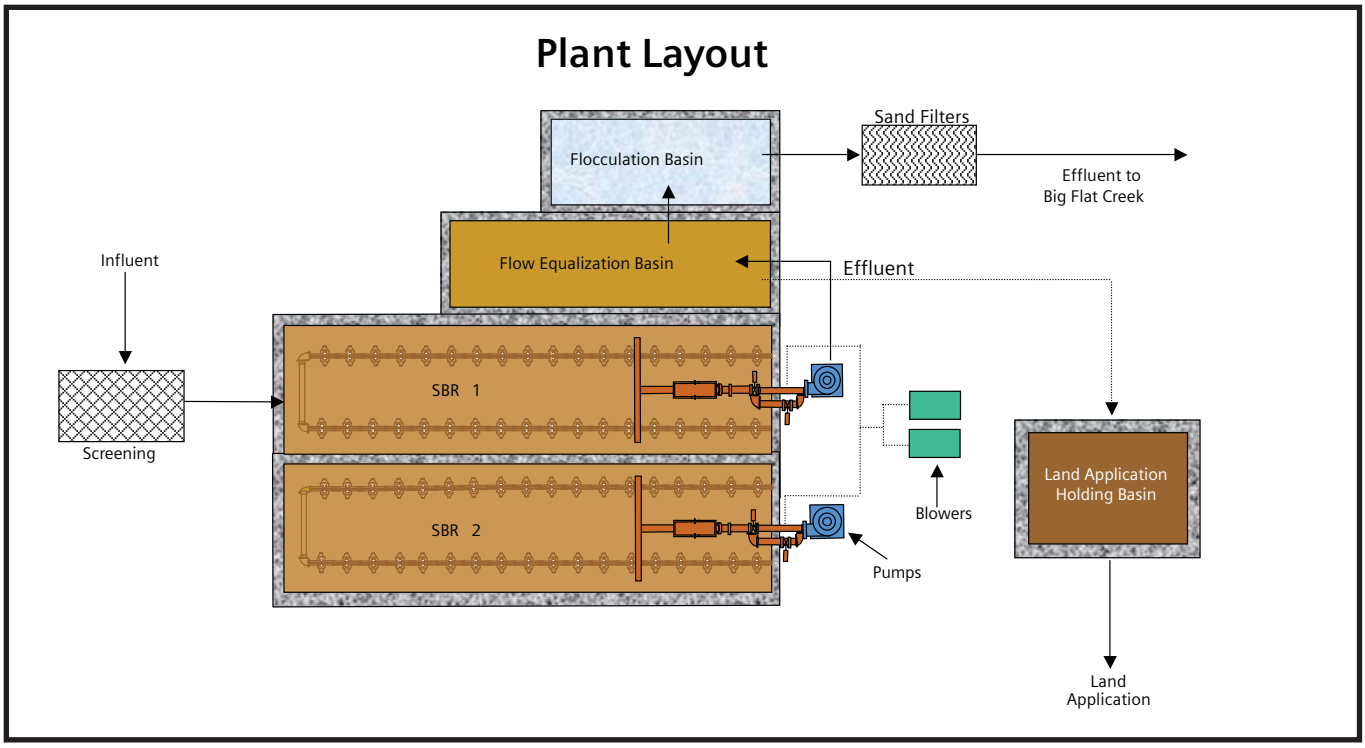
The engineering firm, Pendergrass & Associates, Inc. provided the planning and design of this facility to treat approximately 2.0 million gallons per day (MGD) of wastewater. Stevenson and Palmer Engineering, Inc. was responsible for the construction and inspection of this facility.

The process flow for the Loganville plant begins when the raw wastewater flows to the plant by gravity sewers. At the lowest part of the plant the wastewater is screened and an influent pump station lifts the water to the head of the treatment facility. When the flow enters the system, it passes through a grit chamber and then passes through into one of the two SBR tanks. The wastewater is then treated biologically by mixing and adding air (oxygen) to each tank.

After a settling period, which separates the treated wastewater from the solids it is discharged to the flow equalization basin. The equalization basin holds wastewater for a desired contact time and then pumped to a 3,000,000-gallon land application system (LAS) holding basin, or allowed to gravity flow to a flocculation basin, which acts as a pretreatment for the sand filters. In the flocculation basin the facility has the ability to add chlorine to limit biological action in the sand filters. After a short mixing period wastewater flows to the sand filters where additional contaminants are removed. The flow is then measured, recorded and dechlorinated prior to discharge to the Big Flat Creek, which is a tributary to the Alcovy River.

Up to 250,000 gallons per day (gpd) can be pumped to a land application system holding basin. This in turn is pumped to one of four spray fields for disposal. The biosolids are treated in one of two aerobic digesters, with a centrifuge facility providing either thickening or dewatering of the digested sludge. Thickened sludge can either be returned to the digester or discharged for land application.

Plant Layout



Performance Results
Average Daily Design Flow: 2.0 MGD

	BOD		TSS		AMMONIA	
	Influent mg/l	Effluent mg/l	Influent mg/l	Effluent mg/l	Influent mg/l	Effluent mg/l
Design	250	10	225	10	20	1.7
Actual	380	6	300	5	15	.20

The Loganville facility was started up in March 1999 with an expansion completed in June 2001. In 2004 the Loganville Water Reclamation Facility was presented the award for the "Best Operated Plant of the Year" by the Georgia Water and Pollution Control Association.

Siemens
Water Technologies
1051 Blake
Edwardsville, KS 66111
913.422.7600 phone
913.422.7667 fax