AQUA-AEROBIC SYSTEMS, INC.
A Metawater Company

SUCCESS STORIES

PLANT NAME AND LOCATION
WARM SPRINGS WWTP - WARM SPRINGS, GA

DESIGN DAILY FLOW / PEAK FLOW
0.4 MGD (1514 M³/DAY) / 1.0 MGD (3785 M³/DAY)

AQUA-AEROBIC SOLUTION
DUAL-BASIN AquaSBR® SYSTEM, Aqua SCADA SYSTEM

WARM SPRINGS REPLACES RBC SYSTEM WITH AquaSBR® SYSTEM TO MEET EFFLUENT REQUIREMENTS IN LIMITED LAND SPACE

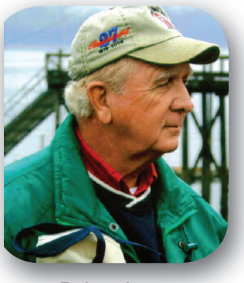
Warm Springs Wastewater Treatment Plant (WWTP) was incorporated in 1950 and utilized a RBC system with secondary clarification and chlorine disinfection to meet BOD and TSS treatment objectives. By 2004, the original treatment system could no longer meet the objectives due to the age of the plant so city officials had to consider an upgrade. Because of land space constraints, options were limited. Since the AquaSBR system is known for its small footprint, Warm Springs decided to research the technology further to determine if it could meet the plants needs for more stringent effluent. After careful consideration, it was chosen as the best option due to its cost-effectiveness and accomodation of limited land space.

Overview of Warm Spring WWTP's AquaSBR® system with integral digester in the center. *Photo Credit: SblevieProductions*

In May 2005, the plant put its new dual basin AquaSBR system with integral digester into operation. Its average daily design flow is 0.4 MGD with a design peak flow of 1.0 MGD. Warm Springs also added Dissolved Oxygen (D.O.) monitoring and an Aqua Supervisory Control and Data Aquisition (SCADA) system to its treatment strategy to reduce energy consumption, operation time and labor.

Warm Springs WWTP serves a population of 300 residents and 500 students/tourists attending the Roosevelt Institute and Roosevelt's Little White House on a daily basis. The Little White House was a vacation house for former President, Franklin D. Roosevelt (FDR). FDR built the house in 1932 because he enjoyed swimming in the area's warm spring waters, which improved his polio condition. FDR also developed many New Deal Programs based on his experiences in the town.

Robert Lovett, Water/Wastewater Superintendent for Warm Springs said, "*One of the best systems I've ever operated in 32 years and I look over seven (7) wastewater treatment facilities in three counties. Aqua-Aerobic did a great job with technical training on the AquaSBR system, particularly at their factory in Rockford, Illinois.*"



Robert Lovett, Superintendent

AquaSBR® SYSTEM PROCESS

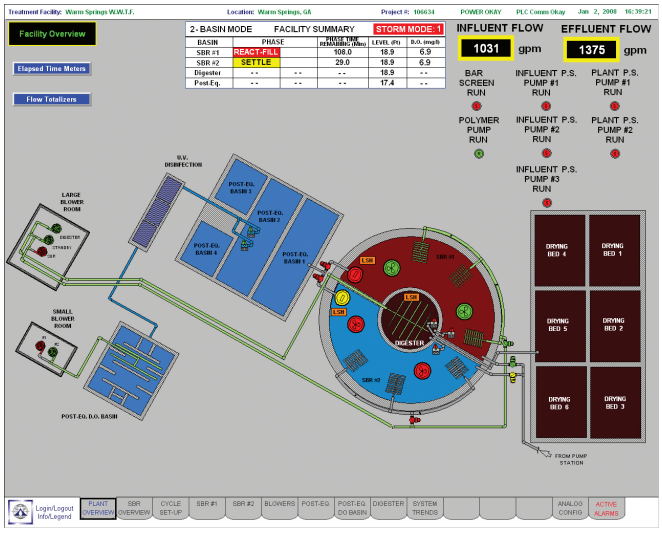
The AquaSBR system operates on a simple concept of introducing a quantity of waste to a reactor, treating the waste in an adequate time period, and subsequently discharging a volume of effluent plus waste sludge that is equal to the original volume of waste introduced to the reactor. This “Fill and Draw” principle of operation involves the basic steps of Fill, React, Settle, Decant, and Sludge Waste. The system may be designed to include seven individual phases of operation but the inclusion or duration of any individual phase is based upon specific waste characteristics and effluent objectives.

Where nutrient removal is required, a simple adjustment to the SBR’s operating strategies permits nitrification, denitrification, and biological phosphorus removal. Optimum performance is attained when two or more reactors are utilized in a predetermined sequence of operation.

DESIGN CHARACTERISTICS

The dual-basin AquaSBR system incorporates an integral digester and is designed to treat an average daily flow of 0.4 MGD and peak flow of 1.0 MGD. The treatment objective of the AquaSBR system is to provide consistently low effluent BOD5, ammonia and TSS. Monitoring D.O. aids in reducing treatment energy consumption and requires little operator adjustment, saving the operator time and labor.

To optimize the plant’s process control, an Aqua SCADA system was also incorporated into the upgrade design. The system allows for data trending and provides additional process control functions such as online analyzers for key process control parameters.



SCADA screen for AquaSBR® system overview.

AVERAGE OPERATING DATA (2007)

LOADING	DESIGN INFLUENT	AVG INFLUENT	DESIGN EFFLUENT	AVG EFFLUENT
AVG Flow mgd	0.4	0.2	----	0.2
Peak Flow mgd	1.0	----	----	----
BOD_5 mg/l	330	190	30 (Dec-Aug) 17 (Sep-Nov)	7
TSS mg/l	240	180	30 (Dec-Aug) 17 (Sep-Nov)	7
NH_3-N mg/l	----	----	4	0.01
TKN mg/l	40	----	----	----

AquaSBR® SYSTEM ADVANTAGES

- Tolerates variable hydraulic and organic loads
- Controls filamentous growth
- Provides quiescent settling
- Separation of aeration and mixing
- Advanced nitrogen and phosphorus removal
- Low installation costs
- Return activated sludge pumping and secondary clarifiers eliminated
- Small footprint
- Simple to expand or upgrade
- One company accountability

Aqua SCADA SYSTEM ADVANTAGES

- Plant optimization
- Single point of control for plant-wide monitoring
- Detailed, dynamic graphics depicting equipment status and PLC command status
- Simple, intuitive navigation between screens
- Historical trending and logging of data
- Consolidated alarming of all SCADA accessed areas
- Remote access for operations personnel and/or Aqua-Aerobic support
- Optional electronic Operation and Maintenance Manual
- Upgrade capabilities for existing controls