

Holistic Approach

CleanFlo™, STM-Aerotor™, COP™ Clarifier, & WWETCO FlexFilter™



CASE STUDY

Location: Franklin, Georgia
Owner: Heard County Water Authority
Engineer: Hayes, James, & Associates
Contractor: P.F. Moon

Outdated Equipment

The Heard County Water Authority serves over 380 connections in and around Franklin, Georgia. With a growing population, Heard County was beginning to exceed the capacity of the existing wastewater treatment plant.

Limited treatment capacity, outdated equipment, and increasingly stringent effluent requirements led Heard County to update their wastewater treatment plant. Working with Hayes, James, & Associates, Heard County began evaluating processes to determine the simplest and most cost-effective solutions for their new treatment plant.

The updated plant was permitted for 250,000 gallons/day but designed for 700,000 gallons/day, with 100% redundancy. Increased capacity and redundancy provided a sustainable system, allowing the plant to upgrade the discharge permit without the need to purchase new equipment in the future.

Equipment Selection

In 2008, WesTech was selected to provide the major process equipment for the new plant including one CleanFlo™ All-In-One Combined Headworks System, two (2) STM-Aerotor™, two COP™ Clarifiers, and one WWETCO FlexFilter™.

The WesTech CleanFlo All-In-One is a pre-engineered headworks system that includes fine screening, screenings dewatering, and aerated grit removal in a compact, self-standing unit.

CleanFlo™ All-In-One	
Quantity	One (1)
Peak Flow	750,000 gallons/day
Grit Capture	95% > 50 mesh 85% > 70 mesh 65% > 100 mesh
Grit Tank Air Requirement	16-42 cfm @ 2.6 psi



CleanFlo™ All-In-One

For biological treatment, Heard County employed WesTech's STM-Aerotor. The Aerotor combines fixed film and activated sludge treatment processes into a single compact system. Aeration is achieved without the use of blowers, aeration piping, or diffusers due to the innovative design of the STM-Aerotor.

The Aerotor captures atmospheric air with each rotation, draws it down into the mixed liquor, and slowly releases the compressed air as coarse bubble aeration. In addition to effective aeration, the Aerotor also provides a large surface area for fixed film growth, providing for a more diverse population of biology and improving the sludge settling characteristics of the solids.

STM-Aerotor™	
Quantity	Two (2) trains
Schematic	Two (2) basins in parallel
Dimensions	4.8 m diameter x 6 m wide
Motor HP	12.5 HP

WesTech's STM-Aerotor is the perfect fit for Heard County due to its compact footprint, low energy consumption, and simple operation. The slow-speed mechanism reduces operating noise and the STM-Aerotor process eliminates aerosols and minimizes odors.

COP™ Circular Clarifier	
Quantity	2 (two)
Design Flow Rate	375,000 gpd/unit
Dimensions	32 ft square
Sludge Collection	Spiral Blades
EDI Configuration	Dual Gate

Following the biological process, Heard County selected WesTech's COP Clarifier, utilizing spiral blade scrapers. The COP Clarifiers combine multiple performance enhancing features into a single system, providing for one of the most efficient secondary clarifiers on the market.

For Tertiary treatment, Heard county selected the WWETCO FlexFilter. The FlexFilter is a simple gravity filtration system, requiring no moving parts.



WWETCO FlexFilter™

The filter is composed of compressible media with a tapered compression gradient for increased filtering capacities. This unique media design gives the filter the ability to produce high quality effluent while treating flow streams with high solids concentrations.

To minimize the amount of backwash water used, the WWETCO FlexFilter uses a combined air scour and water backwash. The backwash is air induced and only uses as much water as needed to wash the media. This unique design thoroughly cleans the media while producing < 2% backwash waste.

By replacing outdated equipment and processes, the Heard County Water Authority was able to increase the quality of the effluent while reducing operations and maintenance. The fully automated system allows operators to control processes from a central location and monitor effluent quality.

Customer Satisfaction

Operators at the Heard County Water Authority are pleased with the new system. They are especially pleased with the low cost to run the plant, energy efficiency, and the ease of operations and maintenance. The Utilities Director, Jimmy Knight, said "We now have more treatment capacity, provide better treatment and have less installed power as compared to the previous plant." He estimated that they are saving up to 40% per month on their power bill while discharging higher quality water.

The treatment system provided by WesTech allowed Heard County to meet strict footprint requirements and provide high quality effluent, all while reducing capital and operational costs.

WesTech optimized treatment processes and met the limited space requirements, allowing Heard County to increase capacity and meet the new discharge regulations, maintaining a healthy natural ecosystem in the Chattahoochee River.

Heard County Water Quality			
	Influent	Effluent	% Removal
BOD₅	281 mg/L	5.5 mg/L	98%
Suspended Solids	216 mg/L	5.0 mg/L	98%



COP™ Clarifier

Effective Jan. 1, 2021, WesTech will discontinue new equipment sales in most of our headworks equipment line for municipal wastewater applications. Support for all current installations and some legacy headworks equipment will be provided through our dedicated Aftermarket/Parts and Services team.

Please visit our product listings page to learn about: [Grit Collectors](#), [Shafted Grit Screw Classifiers](#), [Vortex Grit Chambers](#), the [CleanFlo™ SHEAR™ Rotary Drum Screen](#) and [WTR® screens](#).