



AQUA-AEROBIC SYSTEMS, INC.
A Metawater Company

SUCCESS STORIES

PLANT NAME AND LOCATION

TALLADEGA WATER & SEWER DIVISION – TALLADEGA, AL

DESIGN DAILY FLOW / PEAK FLOW

3.5 MGD (13,249 m³/day) / 8.5 MGD (32,176 m³/day)

AQUA-AEROBIC SOLUTION

2 Aqua MegaDisk® Filters (8-disk) utilizing OptiFiber PES-14® pile cloth media



TALLADEGA WATER & SEWER INSTALLS FIRST Aqua MegaDisk® CLOTH FILTER IN ALABAMA

Since the early 90's, several new businesses have situated in Talladega, Alabama and several existing businesses have expanded. This burst in economic growth prompted the city to undergo major upgrades to its water and sewer infrastructure to accommodate its increase in customers.

In addition to serving city residents and businesses, Talladega Water & Sewer Division also provides water to the nearby communities of Waldo and Lincoln, and the Talladega Superspeedway, a NASCAR race track. The Division currently operates (3) wastewater treatment facilities located in various areas of the city and county. The facilities incorporate physical, chemical, biological and filtration treatment methods.

In December 2015, Talladega underwent an upgrade to its tertiary filtration method to comply with effluent total suspended solids (TSS) requirements. It replaced (2) microscreen filters having a capacity of 12 MGD with (2) 8-disk Aqua MegaDisk® Filters utilizing OptiFiber PES-14® Pile Cloth Media. The microscreen filters were no longer serviceable due to plugging and leaking of solids. Talladega opted to upgrade with pile cloth media filters instead of new microscreen filters for several reasons:

- Easily retrofitted into existing tankage and hydraulic profile, which saved space and cost
- Increased capacity by 4 MGD in a smaller footprint



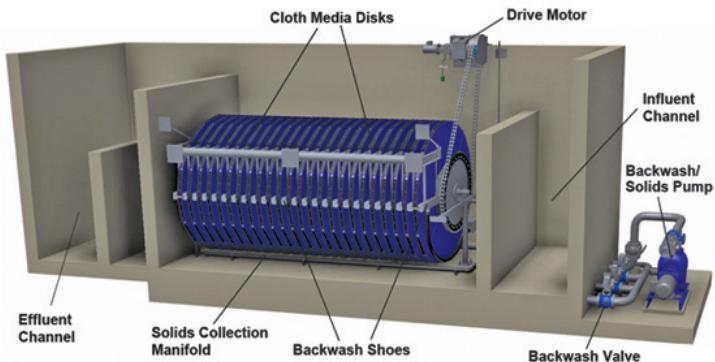
The (2) Aqua MegaDisk® filters at Talladega, AL are located next to each other in concrete tanks.

- Reduced power consumption
- High turbidity & total suspended solids removal would improve disinfection for meeting permit requirements
- Eliminated separate backwash source due to vacuum backwash of the cloth media
- Offered readily available parts and minimal maintenance

The Aqua MegaDisk filters will easily accommodate future growth of the city without additional equipment or footprint, and will meet increased permit requirements.

Aqua MegaDisk® FILTER PROCESS

Clarified effluent from the trickling filter system enters the filters and flows by gravity through the cloth media of the stationary hollow disks. The filtrate exits through the hollow shaft which supports the individual disks and flows to the effluent channel. As solids accumulate on the surface of the media, the water level surrounding the disks rises. Once a predetermined level is reached, the disks rotate and the media surface is automatically vacuum backwashed clean. Heavier solids settle to the bottom of the tank and are then pumped to a digester or to the plant headworks.



DESIGN CHARACTERISTICS

The (2) 8-disk Aqua MegaDisk filters are capable of treating 16 MGD, double the city's current peak flow capacity. Each vertically oriented disk is 10 feet in diameter with (8) removable segments for ease of installation and maintenance.



One of the Aqua MegaDisk® filters in operation.

AVERAGE OPERATING DATA

December 2015 - May 2016

LOADING	DESIGN INFLUENT	AVG INFLUENT	AVG EFFLUENT	PERMIT EFFLUENT
Avg Flow mgd	5.0	3.5	3.45	NA
Peak Flow mgd	16	8.5	NA	NA
TSS mg/l	10	---	3.69	30

Talladega Water & Sewer emphasizes ongoing preventative maintenance to achieve minimum operation and maintenance costs, while meeting environmental compliance.

Aqua MegaDisk® FILTER ADVANTAGES

- Fewer filters required, resulting in a smaller footprint and lower capital and operating costs
- Eight (8) lightweight, removable disk segments for ease of maintenance
- Low energy consumption since disks are stationary, except when backwashing
- Fewer pumps and valves needed means lower maintenance costs
- Higher solids and hydraulic loading rates
- Utilizes engineered OptiFiber® cloth filtration media
- Produces consistent, reuse-quality effluent
- Backwash system fluidizes fibers for efficient release of stored solids
- Tolerates extreme variations in load
- Vertically oriented disks reduce required footprint
- Low backwash volume results in water savings and energy reduction
- Available in painted steel, stainless steel or concrete tanks
- Eliminates sand media and underdrains

The filters are preceded by a trickling filter biological treatment and followed by chlorine disinfection, then de-chlorinated and discharged into the receiving stream.