

SUCCESS STORIES

AQUA-AEROBIC SYSTEMS, INC.



FROM PRETREATMENT... TO REUSE

PLANT NAME/LOCATION: Anoplate Corporation/Syracuse, NY

TYPE OF PLANT: Industrial/Metal Finishing Services

DESIGN DAILY FLOW: 0.29 MGD (1090 m³/day) **PEAK FLOW:** 0.90 MGD (3407 m³/day)

AQUA-AEROBIC PRODUCTS: 1 AquaDisk[®] Filter (2-disk)

ANOPLATE CORPORATION WILL RECYCLE/REUSE USING THE AQUADISK[®] FILTER

Anoplate Corporation, a proactive leader in the metal plating industry, has been offering a range of metal finishing services to a broad base of customers since 1960. These services consist of plating, anodizing, conversion coatings, and vacuum impregnation. Their customers include the aerospace, computer, electronic, military, medical, optic, and recreation industries.

Like many other industrial plants, Anoplate has to treat its wastewater. A physical/chemical process is used which involves adding the chemical hydroxyl alkalinity to the wastewater to produce precipitated, metal hydroxide waste. This treatment process produces effluent that meets EPA quality requirements for discharge, but is not sufficient for recycling/reuse. Anoplate decided to set a goal to reuse its wastewater by the end of the year 2001 in its new plant in Syracuse, NY. The first step toward meeting this goal was to purchase a filter system that would lower TSS and metal contaminant levels to meet reuse-quality requirements. The new filter would also have to serve as a pre-filter for the future deionized water exchange system to prevent cross contamination. An AquaDisk cloth media filter and a traveling bridge sand media filter were considered for this purpose.



This AquaDisk filter has been treating Anoplate's plating wastewater since June, 1998. Anoplate considers it to be a key component in meeting its goal to reuse its wastewater.



PRODUCTS

Aqua-Jet®
Surface Aerator

Aqua-Jet II®
Contained Flow Aerator

AquaABF®
Automatic Backwash Filter

MixAir®
Aeration System

AquaDDM®
Direct Drive Mixer-Blender

AquaSBR®
Sequencing Batch Reactor

AquaDisk®
Cloth-Media Filter

AquaDiamond™
Cloth-Media Filter

AquaDrum™
Cloth-Media Filter

ThermoFlo®
Spray Cooler

Aqua EnduraDisc®
Fine Bubble Diffuser

Aqua EnduraTube™
Fine Bubble Diffuser

Aqua CB-12™
Coarse Bubble Diffuser

Aqua CB-24®
Coarse Bubble Diffuser

AquaMB Process™
Multiple-Barrier
Membrane System

MSBR®
Modified Sequencing
Batch Reactor

SERVICES

Process and Mechanical
Engineering

Quality Manufacturing

Aftermarket Sales &
Service

International Expertise

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AQUADISK® FILTER INSTALLATION

Following a successful pilot study, Anoplate purchased one AquaDisk package filter from Aqua-Aerobic Systems. The filter was delivered fully assembled for easy on-site installation and included: 1 factory prepared tank, 2 disks covered with model 102 media cloth, a backwash cleaning system, a high-pressure spray cleaning system, a solids removal system and a fully automatic control system. Prior to actual start-up, the unit was inspected and tested by Aqua-Aerobic's service technicians. The technicians also reviewed the operation, controls, and safe use of the equipment with Anoplate's operators and provided them with an Operation and Maintenance Manual for future reference.

AQUADISK® FILTER PROCESS

The primary function of the AquaDisk filter is to filter metal hydroxides from Anoplate's plating wastewater and to pre-filter the effluent before it goes through the future deionized water exchange system. The operation of the AquaDisk filter is depicted in the illustration below.



Clarified effluent flows by gravity through the cloth media of the stationary hollow disks. The filtrate exits through the hollow shaft which supports the individual disks. 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. Solids settle to the bottom of the tank and are then pumped to a digester or to the plant headworks.

DESIGN CHARACTERISTICS/OPERATION

The AquaDisk filter reduces TSS and metal contaminants to required reuse-quality levels.

ANOPLATE'S TSS LEVELS IN MG/L

	Influent	Effluent
Avg Flow	20	10
Peak Flow	40	15

The plant's actual average daily flow is .025 mgd (95 m³/day) with a peak daily flow of .035 mgd (133 m³/day).

To accommodate future plant expansion, the filter was designed to handle an average daily flow of .29 mgd (1090 m³/day) with a peak daily flow of .90 mgd (3407 m³/day).

AQUADISK® FILTER ADVANTAGES:

- Higher quality effluent
- Lower backwash rates
- Tolerates extreme variations in loads
- Reuse quality effluent
- Continuous filtration during backwash
- Small footprint
- Eliminates sand media and underdrains

Anoplate Corporation describes their 2-disk AquaDisk filter as compact, simple, reliable, easy to clean and easy to maintain.