

# CUSTOMIZED SUPERDISC™ FILTRATION SYSTEM MEETS REQUIREMENTS

Fits Within Existing Concrete Basins



## Overview

This municipal wastewater treatment plant is required to meet a monthly average total suspended solids (TSS) discharge limit of  $< 5$  mg/L. With increasing process and mechanical issues, the existing clarifier and sand filters needed an upgrade. After evaluating multiple options based on their ability to fit into the facility's existing concrete basins and hydraulic profile while meeting performance requirements, the customer selected WesTech's [SuperDisc™ system](#) with 10  $\mu$ m pore size to replace the existing sand filters. With a low head requirement and compact design, the SuperDisc system fit within the existing hydraulic profile and concrete basins. WesTech was also selected to supply the replacement secondary clarifier, providing a consolidated process solution.

To retrofit the existing system, WesTech provided two customized SuperDisc units for 2x100-percent redundancy. Material selection was 316 stainless steel to minimize maintenance efforts associated with corrosion and painting. The disc filter included an internal bypass weir so that a separate overflow weir was not required. Customized weir extensions were included on the inlet channel to maintain a compact footprint while providing sufficient weir length to handle high flows during an emergency overflow. WesTech's SuperDisc system has provided reliable, high-quality effluent for the community since 2015. ■

## RESULTS

**$< 5$  mg/L**  
Effluent TSS

**2x100%**  
Redundant Design

**880 ft<sup>2</sup> (82 m<sup>2</sup>)**  
Effective Filter Surface Area per Unit

## Project Summary

Municipal Wastewater  
Treatment Plant Retrofit

**Location:**

Illinois, USA

**Application:**

Tertiary Treatment

**Process:**

Activated Sludge Biological Process

Secondary Clarification

SuperDisc Filtration

**Capacity:**

4,167 gpm/6.0 MGD (946 m<sup>3</sup>/h)

**Design Loading Rate:**

5 gpm/ft<sup>2</sup> (12 m/h)

## Highlights

- The system minimized construction costs by using existing sand filter concrete basins.
- WesTech-supplied secondary clarifier and SuperDisc provide a consolidated process solution.
- Customized access hatches offer ease of maintenance within the existing layout.
- The system maintains the existing gravity feed hydraulics with low head requirements.