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 µm 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 ft² (82 m²)
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 m³/h)

Design Loading Rate:
5 gpm/ft² (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.

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