



Albert Lea By Rick Ashling Wastewater Treatment Plant

Rick Ashling and the operating staff of the Albert Lea MN WWTP received CSWEA's Operations Award for Minnesota at the 83rd Annual Meeting.

The Albert Lea wastewater treatment system is an advanced biological tertiary wastewater treatment facility.

Build in 1983, the facility is a modern, well-maintained wastewater treatment plant. The facility is designed for 12.5 mgd with wet weather flow of 20 mgd with a staff of nine.

Large debris that could damage the wastewater pumps is removed from the raw wastewater prior to entering the pumping station wet well. The raw wastewater is then pumped via a

five-mile forcemain to the wastewater treatment facility.

The wastewater treatment facility consists of grit removal, pre-aeration, primary clarifiers, two-stage aeration secondary clarifiers, nitrification aeration effluent clarifiers filtration and ultraviolet disinfection prior to discharge to the Shell Rock River. The WAS is collected in the aeration units is thickened by flotation thickeners and combined with the primary biosolids for sludge stabilization. The combined biosolids is anaerobically digested, by two primary anaerobic digesters two secondary digesters dewatered by two rotary drum thickeners and stored in two storage tanks until hauled for soil conditioner to farmland.

The wastewater treatment facility is designed to produce an effluent quality of 5 mg/l CBOD, 1 mg/l ammonia nitrogen and 5 mg/l TSS.

The facility is one of the first in the state of Minnesota to install and operate a microturbine using methane gas to produce 120 KW and provide heat recovery. [CS](#)

Influent Wastewater Characteristics

Design Flow	12.5 MGD
BOD	194 mg/l
TSS	278 mg/l
Ammonia Nitrogen	48 mg/l
Effluent Limitation	
BOD	5 mg/l
TSS	5 mg/l
Ammonia Nitrogen	1.0 mg/l

Process Equipment	
Aerated Grit Chambers	2
Pre-aeration Tanks	2
Primary Clarifiers	2
Secondary Aeration Tanks	4
Secondary Clarifiers	2
Nitrification Aeration Tanks	4
Nitrification Clarifiers	2
Effluent Filters	4
Ultraviolet Disinfection	4
Dissolved Air Flotation	2

Anaerobic Digesters	
First Stage	2
Second Stage	2

Boilers	4
Microturbines	4
Rotating Drum Thickeners	2
Biosolids Storage Tanks	2

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