



Park Forest, IL Water Treatment Plant

SUSTAINABLE FEATURES

Water Conservation Efforts

The original treatment facility was a combination of lime softening to remove carbonate hardness and ion-exchange to remove non-carbonate hardness. The combined waste water effluent resulted in approximately fifteen-percent of the virgin water removed from the aquifer being wasted.

The new treatment facility utilizes water conservation techniques including recycling to virtually eliminate wasted water. This includes recycling of the filter backwash water and dewatering press filtrate water back to the start of treatment.

The recycling effort helped preserve our precious groundwater resource. The Village is able to extend its existing supply capacity without adding new wells. Approximately 1 month of Average Daily Water Demand is saved per year.

Energy Conservation Efforts

By recycling the waste water, this eliminates the need to pump water from the aquifer and discharge to the sanitary sewer, therefore saving energy previously used to pump the water to the sewer.



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Background

The water supply and treatment system of the Village of Park Forest faced several issues. The existing treatment units at the Water Treatment Plant were old and overloaded, and their treatment effectiveness continued to deteriorate in spite of extensive maintenance. The most pressing issue was that the existing Water Treatment Plant was outdated with respect to a rapidly changing regulatory environment. The current method of liquid waste disposal was no longer allowed and had to be brought into compliance with the applicable regulations.

Challenge

Design a new plant using modern day technologies in a timely manner to avoid USEPA sanctions. Keeping the existing plant in operation throughout the construction of the new facility was also a necessity.

Solution

Careful consideration and a detailed plan resulted in an effective means of maintaining the water supply for the Village of Park Forest throughout the new plant's construction. The project was also designed in an abbreviated time frame in order to ensure it was a candidate for participation in the Illinois Safe Drinking Water Act Revolving Loan Fund.

Results

A new \$15.6 million dollar lime-soda ash water softening plant was built on time and helped the Village avoid costly non-compliance fines from the USEPA.

This project was awarded a 2008 Special Achievement Award from the American Council of Engineering Companies of Illinois.



Interior of Tanks



Water Treatment Plant Exterior