



# MAHONING VALLEY SANITARY DISTRICT TREATMENT PLANT

## CHALLENGE

THE MAHONING VALLEY SANITARY DISTRICT NEEDED MAKE IMPROVEMENTS TO THE FUNCTION OF THEIR ENTIRE WATER TREATMENT OPERATION, WITH SPECIFIC ATTENTION TO THE MIXING AND SETTLING COMPONENTS.

## SERVICES

- Construction Administration
- Permitting
- Electrical Engineering
- Mechanical Engineering
- Architectural Design
- Site Analysis
- Environmental Studies
- Structural Engineering

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The Mahoning Valley Sanitary District (MVSD) operates a 60-MGD lime-soda softening plant to supply the cities of Youngstown and Niles, located in northeast Ohio.

MVSD has long recognized that improvements to the mixing and settling processes were necessary to continue providing high quality water as efficiently and economically as possible. Recent installation of

new filter-control equipment significantly increased the urgent need for mixing and settling improvements.

Adding to the problem is the fact that MVSD currently does not utilize recarbonation in its water treatment operations, which results in excessive deposits on the settling basins, filter-control equipment, and eventually on valves, meters and other equipment in

the distribution system. Removing the deposits requires costly and time-consuming maintenance.

An adequate recarbonation facility, as well as improvements to the mixing and settling processes, was the goal as ms consultants was brought in to develop a Preliminary Design Report to evaluate alternatives and provide recommendations for system improvements, including raw water metering.

Based upon the District's approval of the recommendations in that preliminary report, ms then proceeded with final design services, the preparation and submittal of applicable permit applications, and contract documents (including plan drawings and technical specifications) for solicitation of construction bids.

The old grit chamber, old railroad trestle and former coal storage bin were also demolished.

The former underground recarbonation tanks were filled with over 3,000 tons of compacted limestone sand to make way for a new loading dock area at the main Head House.

A five-month-long excavation ranging from 34-54 feet deep and approximately the size of a football field has taken place, with a massive retaining wall system in place to support the existing access roads above.

The massive excavation allowed for the start of construction for the new sludge control/settled water facility, two new Solids (SCU) Contact Units with two 60" raw water influent pipes, and a new pH control building.

The general contractor is erected two 30 MGD Solid Contact Units. An estimated 3,100 yards of concrete went into each SCU when construction was completed.

Two new 50-ton CO2 tanks are in place, and the plants electrical services and security system are currently being upgraded through the main Head House Building.

The electrical contractor has separated electrical services to several of the buildings, so that each building now contains independent electrical services.

Additional improvements were also added to update MVSD's SCADA and security system.