



Project Profile

Design-Build WTP: Maple Shade, New Jersey 3.3 MGD Iron Removal Plant Replaces 80-Year Old Ion Exchange System



New Water Treatment Plant mid-construction. Note multi-media filters on far right.

The New Jersey Township of Maple Shade draws its water supply from the PRM aquifer through a series of high capacity wells. High iron concentrations were beyond the capacity of the ion exchange process used in the 1920s-era treatment plant. A drawback of the original design was the large volume of discharged brine from system regeneration which caused upsets downstream at the wastewater treatment plant.

An outside consultant recommended a Design-Build contract and developed an RFP. Layne Christensen Company was the only bidder qualified to fulfill all contract requirements with its own forces. Layne was awarded a contract to design and construct a 2500 GPM drinking water treatment plant and all required infrastructure. Layne performed all sitework, including excavation and mechanical installation both above and below grade, all well redevelopment and abandonment, all carpentry and a portion of the structural concrete. All pretreatment and filtration equipment was fabricated in Layne's 20,000 square-foot facility in Bridgewater, New Jersey.

The integrated system includes facilities on the site as well as the Kings Highway Water Plant, and an elevated water storage tank to receive water from other systems. Based on worst-case iron levels the system is designed to treat raw water with iron levels as high as 24 ppm through oxidation, precipitation and filtration.

While fully automated, the plant also has the ability to operate in semi-automatic or fully manual mode if necessary. The pre-treatment system accommodates a complete shutdown of one treatment train while processing 1250 GPM in the remaining train.

As part of a Green Initiative the plant minimizes discharge by recycling all filter backwash. Solar collectors, approved and funded by the NJ Environmental Trust Fund, help reduce the plant's carbon footprint. In July of 2009, the plant went online and has been performing satisfactorily within design parameters.

Award Date: July 2007
Completion Date: July 2009
Project References: Upon Request

General Contractor:
Layne Christensen Company
Project Manager: Keith Perkowski
Design Engineer: Rich Sharkey
Construction Manager: Dave Schrettnr

Owner: Township of Maple Shade, NJ

Engineer: Remington & Vernick

Contract Amount: \$10,000,000



Cascade Aerators oxygenate raw water.



Inclined Plate Clarifier.



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Layne Christensen Company

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