



Delaware Aqueduct Tap Filtration Study

Consolidated Water District Town of Newburgh, New York

The Project

The Town of Newburgh supplies drinking water to about 23,000 customers in the Consolidated Water District (CWD) and the neighboring Town of Marlborough. Their sources of supply are: (1) the Delaware Aqueduct Tap (DAT) facility, which withdraws water from Shaft 5A of the New York City Delaware Aqueduct; and (2) the Chadwick Lake Water Treatment Plant (WTP), which provides filtered water from the Chadwick Lake Reservoir (a back-up supply). Current average daily demands are 3.1 million gallons per day (mgd) and maximum day demands are 5.5 mgd.

Until recently, the Town had been granted a filtration waiver from the New York State Department of Health (NYSDOH) for its Delaware Aqueduct supply. Current treatment at the DAT consists of chlorination, fluoridation, pH adjustment, and corrosion control. Recent increased disinfection byproducts (DBPs), primarily Haloacetic Acids Five (HAA5), in the Town's distribution system have resulted in the requirement to provide filtration of the DAT water due to the violation of the Stage 1 Disinfectant/Disinfection Byproduct Rule (Stage 1 DBPR).

Stearns & Wheler's Approach

The Town retained Stearns & Wheler to evaluate filtration alternatives with the goal of filtering the DAT water and reducing disinfection byproducts to comply with the impending Stage 2 DBPR. The study included the following tasks:

- Projection of 10-year and 20-year service population and associated water demand.
- Evaluation of the expansion of their back-up supply (for times when the DAT is shut-down).
- Developed a water quality monitoring program to characterize the nature of the DBP forming organics.



- Reviewed and summarized historical water quality data.
- Summarized the current and proposed drinking water regulations relative to the Town.
- Established treatment goals.
- Evaluated three filtration technologies including:
 - Dissolved Air Flotation and Granular Media Filtration
 - Direct Granular Media Filtration
 - Membrane Microfiltration

Stearns & Wheler recommended Membrane Microfiltration as the technology best suited for the Town's needs and desired method of operation. The Town has accepted the recommendation and Stearns & Wheler is moving forward with the preliminary design of a 6.0 mgd membrane microfiltration water treatment plant.