

# Finished Water

A PHOTOGRAPHIC PROFILE



Ozonation helps the Great Pond WTP comply with Stage 2 D/DBPR requirements.

## GREAT POND TREATMENT PLANT MAKES WAY FOR NAMESAKE

After more than 70 years of service to the town of Weymouth, Mass., the original Great Pond Water Treatment Plant (WTP) has been replaced by its namesake. The original plant, modified over the years to meet growing demands and evolving drinking water regulations, was so old that annual repair costs exceeded the long-term costs for a new facility. Pilot studies completed in 2005 compared membrane filtration performance with dissolved-air flotation and media filtration. Ozone was needed to enhance organics removal to comply with the US Environmental Protection Agency's Stage 2 Disinfectant/Disinfection Byproduct Rule (D/DBPR) requirements. The new Great Pond WTP was constructed adjacent to the original facility.

### PROJECT SPECIFICS

**Project Name:** New Great Pond WTP

**Operator/Contractor:** Town of Weymouth/  
C.H. Nickerson & Co.

**Designer:** Environmental Partners Group,  
Quincy, Mass.

**Completion Date:** Sept. 15, 2010

**Water Source:** Great Pond

**Technology:** Treatment consists of pre-oxidation using potassium permanganate, coagulation/flocculation using polyaluminum chloride, three dissolved air flotation trains, two intermediate ozonation systems, and four deep-bed granular activated carbon filters. The plant also uses free chlorine for secondary disinfection, hydrofluorosilic acid for fluoridation, phosphoric acid for corrosion control, sodium hydroxide for pH adjustment,

and sodium bicarbonate for alkalinity adjustment.

**Construction Cost:** \$32.2 million

**Service:** Design capacity, 8 mgd

**Physical Size:** The treatment plant covers 26,350 ft<sup>2</sup> of floor space on a 10-acre site. The new facility incorporates a recently renovated raw water intake, a recently constructed residuals pump station, and sludge lagoons.

**Number of Operators:** 24/7 operations with a plant manager, five certified operators, a laboratory technician, and three maintenance mechanics

**Special Features:** The plant was designed to handle existing and proposed drinking water regulations. Provisions were also included for possible future installation of ultraviolet disinfection.