Finished Water

A PHOTOGRAPHIC PROFILE

Contractors lay 72-in. pipeline in deep underground trenches to carry raw water to Omaha's new treatment plant from a new wellfield tapping the Platte River aquifer.

CONSTRUCTION BEGINS IN OMAHA ON MASSIVE SUPPLY PROJECT

The Metropolitan Utilities District Platte West is a comprehensive water supply, treatment, storage, and transmission project to develop a new water supply for the Omaha, Neb., metropolitan area. This multidisciplinary project involves architectural, structural, electrical, mechanical, instrumentation, treatment process, and operational specialists.

In addition to development of a new water treatment plant and wellfield, the project includes more than 17 mi of new ductile-iron and spiral-welded steel pipe manufactured by American Cast Iron Pipe Company. This includes raw water transmission mains ranging in size from 16 in. to 72 in, and 54-in. finished water mains.

PROJECT SPECIFICS

Project: Platte West Water Production Facilities

Owner: Metropolitan Utilities District of Omaha

Designer: HDR Engineering

Completion Date: June 2008

Water Source: Platte River Alluvial Aquifer

Technology: Powdered activated carbon (PAC) application, iron and manganese reduction, split treatment lime softening, filtration, and disinfection. Partial softening to meet the finished water goal of approximately 150 mg/L total hardness. Unsoftened flow treated with ferric sulfate. Primary disinfection with free chlorine, with chloramines for secondary disinfection. Recycle of backwash water to optimize product-to-waste ratio. An extensive digital fieldbus instrumentation system.

Project Cost: $352 million

Service: Capacity of 100 mgd to boost utility capacity to 334 mgd and improve service to rapidly growing western Omaha.

Physical Size: Plant exceeds 630,000 ft^2, and the wellfield covers more than 2,000 acres. The plant features two 50-mgd treatment trains, two PAC contact basins, six solids-contact basins, 12 dual media filters, a 15-mgd clearwell, 13 high-service transfer pumps, residuals processing facility, and four 80-kW natural gas standby generators.

Staff Size: 16 on-site employees

Number of Operators: 8

PHOTOGRAPH: MARK PERKINS, AMERICAN CAST IRON PIPE COMPANY