



Kentucky American Water Treatment Plant Construction

## PROJECT PROFILE CONSTRUCTION

### CLIENT

Kentucky American Water, Inc.

## TREATMENT PLANT AND VERTICAL PIPELINE CONSTRUCTION

Owenton, KY

### SITUATION:

Political struggles over raw water sources had delayed the development of this long term water supply solution for the Central Kentucky Region and the proposed site of the plant presented many design challenges. Also, the World Equestrian Games were being held in 2010, which would place a great demand on the regional water supply.

### SOLUTION:

Layne decided to pool resources to ensure on-time completion. A Joint Venture was formed with W. Rogers Co. of Lexington, KY. Facilitated partnering was engaged to coach all members of the team in solving issues in a true partnering mindset. This project was successful because of the full collaboration of our project team, and was built in less than 2 ½ years, making it online in time for the 2010 World Equestrian Games.

Layne worked with the design engineer and owner on early conceptual designs and constructability issues. Unique construction techniques were suggested for the deep river intake in rock, raw water pipelines with significant elevation changes and a sharp turn in direction. The 20 MGD plant design employed state of the art components including high rate plate settlers and on-site sodium hypochlorite generation.

Design included a unique pipeline anchor system to allow the raw water transmission line to traverse the bluff and carry process and electric utilities between facilities. Process treatment includes rapid mixers, horizontal reel flocculation, plate settler clarifiers and mixed media dual cell filters. Structures consisted of Chemical Building, Sludge Dewatering Building, Primary Clarifiers, Aeration Tanks, Secondary Clarifiers, and Effluent Plant PS with future UV provisions and Clearwell. SCADA design incorporated a fully automated system. For redundancy, the electrical system design takes medium voltage service from the utility and provides a redundant service utilizing 5kV and 480 volt distribution networks.

### SERVICES EMPLOYED:

- + Water Treatment Plant Construction
- + Intake Construction
- + Pump Station Construction
- + Pipeline Construction

