

Wes Brown Water Treatment Plant Upgrade, Thornton, Colorado

- Removed and relocated the existing UV disinfection system to incorporate microfiltration/ultrafiltration (MF/UF) treatment
- Lime Storage and Feed Facilities: demolished the existing lime and feed equipment and facilities as part of the upgrade
- Fast-track construction completed on-budget and operational on-schedule
- Developed treatment processes to meet all existing and anticipated water quality regulations
- Ancillary Electrical and Hydraulic Systems: work included all new power feed, new motor control center sections, modifications to the existing engine generator equipment, and new passenger and maintenance elevators

CH2M HILL participated in a joint-venture subcontract with Garney Construction for the \$55.1-million General Contractor/Construction Management (GC/CM) upgrades to the Columbine Water Treatment Plant (WTP) (since renamed the Wes Brown WTP) for the City of Thornton, Colorado. The project increased capacity of the treatment plant from 30 mgd to 45 mgd while upgrading the conventional treatment process to advanced membrane treatment.

The project included improvements to the raw water pump station; modifications to the pretreatment and upflow solids contact clarifiers; and replacement of existing gravity-flow tri-media filters with approximately 50 mgd of microfiltration/ultrafiltration (MF/UF) membrane capacity. Connections were installed to allow a portion of the filtrate water to be further treated with 15-mgd of reverse osmosis membrane capacity in order to reduce nitrates.



In addition to the advanced treatment processes, the project included construction of new chemical feed facilities; a 3-MG clearwell; a new high service pump station; a new Warm Vehicle Storage building; and a remodel and an addition to the existing Administration Building along with other improvements. The existing chlorine gas disinfection facility was replaced with a new disinfection facility using bulk sodium hypochlorite.

CH2M HILL and Garney self-performed approximately 75 percent of the work, including excavation, concrete, process equipment installation, yard piping, mechanical, and extensive demolition. The project included a very aggressive schedule in which the existing WTP was taken out of service in the Fall of 2004 and completely remodeled to install the new MF/UF processes. This extensive remodeling was operational in March of 2005.

CH2M HILL and Garney Construction instituted a formal partnering process with the City of Thornton, project stakeholders, and public groups to ensure a successful project public relations campaign. This involved partnering sessions and workshops to address issues, including impacts during construction, and to ensure thorough communications during the project.