



Presented By:
Roy Herndon
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Orange County Water District

Environmental Engineering *Seminar Series*

Friday, January 15th 2016

MDEA

1:30PM - 2:30PM

Hydrogeologic Considerations In Managing The Orange County Groundwater Basin

About 2.4 million residents of northern Orange County depend on groundwater to supply 70 percent of their total water demands. The Orange County Water District is the agency responsible for managing the 300-square mile Orange County Groundwater Basin. Because groundwater is about half the cost of the alternative water supplies imported from northern California or the Colorado River, groundwater producers (local cities and retail water districts) desire to meet as much of their water demands as possible from the groundwater basin. OCWD is responsible for replenishing the basin via surface water infiltration facilities and injection wells which control against overdraft and seawater intrusion. The basin comprises a heterogeneous series of unconsolidated alluvial and marine sedimentary deposits that form three major aquifer systems. Having developed one of the most comprehensive regional groundwater monitoring programs in the world, OCWD has gained a relatively advanced understanding of the basin hydrogeology, sustainable yield, operating range, and susceptibility to water quality impacts such as seawater intrusion and anthropogenic contaminants. OCWD operates a number of key facilities that allow the basin to be sustainably managed, including the world's largest non-potable reuse project (Groundwater Replenishment System), 1,000 acres of surface water infiltration facilities, seawater intrusion barriers, hundreds of monitoring wells, groundwater flow models, and a detailed database and GIS. An overview of OCWD and current hydrogeology-related activities will be presented by Mr. Herndon.



Mr. Herndon is the Chief Hydrogeologist at the Orange County Water District, the agency responsible for managing the 300-square mile Orange County Groundwater Basin. For the last 20 years, Mr. Herndon has directed the activities of OCWD's Hydrogeology Department, including numerical groundwater flow modeling, performance evaluation and improvement of two seawater intrusion barriers, basin-wide and local-scale groundwater level and quality monitoring programs and investigations, and the operation of a comprehensive water resources data management system. He has directed the installation of over 100 multi-depth monitoring wells to depths up to 2,000 feet and serves on several technical advisory panels, including one to assist the California Department of Water Resources in implementing the Sustainable Groundwater Management Act that was signed into law in 2014. He holds a B.A. degree in Geology from The Colorado College, a M.S. degree in Hydrology and Water Resources from the University of Arizona, and is a California professional geologist and certified hydrogeologist.