

RESUME

THOMAS M. DEA, P.E.

Experience

Mr. Dea has a diverse background in groundwater resources, hydrologic investigations, water system construction, monitoring well construction, and water treatment design. He was vice president of TZA Water Engineers (TZA), a Lakewood, Colorado based consulting firm, from 2001 until TZA merged with Lamp Rynearson in February of 2014. He is currently a senior project manager for TZA Water Engineers, a Lamp Rynearson Company. His previous employment includes sales engineer / project manager and environmental sales manager positions with Layne-Western Company (the nation's largest water supply and environmental drilling company). Mr. Dea has designed and managed projects which involved: ground water extraction; groundwater monitoring; well construction; design of water supply conveyance; and, design of potable water treatment facilities. Mr. Dea is a Small System Water Operator and a Class C Water Operator in the State of Colorado.

Project experience with TZA includes all aspects of water resources development, management, and protection. TZA provides specialized consulting services in the areas of: water rights analyses and expert testimony; hydrologic modeling of river basins and ground water systems; water supply planning and development; design and construction of water conveyance and distribution facilities; permitting and regulatory compliance; and, evaluation of ground water flow and contamination problems.

At Layne-Western, Mr. Dea worked as a sales engineer, project manager, and environmental sales manager. Mr. Dea directed the start-up and growth of the environmental groundwater construction business in northern California and northern Nevada. His duties included: supervising hydrogeologic investigations; design and construction of water supply wells; design and construction of pumping systems; design and construction of water distribution systems; well rehabilitation design and implementation; and, project management.

Education

B.S., Geologic Engineering, New Mexico Institute of Mining and Technology, 1985

Professional Positions

TZA Water Engineers, a Lamp Rynearson Company
Senior Project Manager (February 2014 – Present)
TZA Water Engineers, Inc., Lakewood, Colorado
Vice President (2001 – February 2014)
Layne-Western Company, Denver, Colorado
Sales Engineer / Project Manager (1985– 1986, 1993–2001)
Layne-Western Company, Woodland California
Environmental Sales Manager / Sales Engineer (1986 – 1993)

Professional Registrations

Registered Professional Engineer in Colorado (Civil)
Registered Professional Engineer in Wyoming (Civil)

Water System Small Operator in Colorado
Class C Water Operator in Colorado

Memberships

National Groundwater Association, American Water Works Association, Colorado Groundwater Association (President 2003/2004), Colorado Rural Water Association, Wyoming Water Quality and Pollution Control Association.

Selected Project Experience

Water Supply Design & Evaluation. Client: City of Gillette, Gillette, Wyoming. Development of large diameter “reverse circulation” water supply wells in the Fort Union aquifer to replace existing low production wells. The sustainable yield of the well field was evaluated, and technical assistance was provided to evaluate the new wells and existing well fields operated by the City of Gillette. Evaluate Gillette wells in the Madison Limestone, Fort Union, and Lance Fox Hills aquifers, assist Gillette Staff with development of an operation and maintenance plan for all wells in the Gillette municipal system.

Reservoir Seepage Study. Client: R.O. Barlow, Fort Morgan, Colorado. Designed a monitoring well field and monitored the effects of reservoir levels on the neighboring property’s alluvial aquifer. Monitoring wells were installed to evaluate the effects of water storage upon existing farm land. The between reservoir levels and monitoring well levels in monitoring wells on the farm property were defined. The property was sold and the monitoring project was abandoned.

Hydrogeologic Investigation. Client: Center of Colorado Water Conservancy District, South Park, Colorado. Conduct hydrologic studies to determine alluvial aquifer water levels and define hydrogeologic conditions that would affect groundwater flow. Test holes and monitoring wells were installed to monitor seasonal fluctuations in water levels.

Water Supply Well Field. Client: Rocky Mountain Energy Center, Keenesburg, Colorado. Development of an alluvial well field along the South Platte River near Fort Lupton, Colorado. The well field was designed to provide process water to the Rocky Mountain Energy Center in Keenesburg, Colorado. Monitoring wells were constructed and tested at several locations to assist with determining the best location for construction of a high capacity well field. Design, construction, and testing of several high capacity wells along the South Platte River was performed to provide sufficient water to meet the clients projected demands. The sustainable yield of the well field was evaluated, and technical assistance was provided in permitting the well field.

Plan for Augmentation. Client: Town of Hudson, Hudson, Colorado. Evaluated the water uses within the municipal service area to determine the amounts of water consumed by municipal demands. Identified the depletive effects upon Box Elder streamflows caused by pumping the Town’s tributary wells. Developed a system of measurement and record-keeping to quantify the return flows resulting from use of tributary well water, quantify the stream depletions caused by pumping the tributary wells, and balance the stream depletions by replacement with nontributary ground water. The plan for augmentation has been applied for to the Colorado Water Court.

Water Treatment and Distribution System Design. Client: Land Properties, Inc., LaVeta, Colorado. Performed a study to evaluate alternative treatment methods for treating groundwater under the influence of surface water for a public water supply system. Treatment with filtration was chosen as the preferred alternative, and technical specifications for construction of treatment facilities were prepared. Construction management was provided during installation and testing of the treatment system.

Water Treatment Design. Client: Colorado Real Estate and Investment Company, Aurora, Colorado. Performed a study to evaluate alternative treatment methods for treating groundwater high in fluoride and total dissolved solids for a public water supply system. Treatment with reverse osmosis was chosen as the preferred alternative, and technical specifications for construction of treatment facilities were prepared.

Diagnosis of Pumping System Problems, Client: CH2M Hill, Jerusalem, Israel. Detailed online testing was performed on high voltage pumping equipment to determine problems associated with premature motor and pump failure. Results and recommendations were provided in a detailed report and corrective actions have been implemented.

Well Construction Evaluation, Client: Hageman law, P.C., Lander Wyoming. TZA performed a detailed evaluation of a partially completed water supply well. The initial contractor abandoned the project before completion. Evaluated borehole conditions, and negotiated with an second contractor to complete a 3,200' deep well in to the Tensleep aquifer. Following completion, TZA perform production testing and water quality evaluation for the completed well. Results and recommendations were provided for long term operation and mainanance.

Diagnosis of Pumping System Problems, Client: THF Realty, Park County, Colorado. Detailed inspections on site during pump removal and during factory tear down of pump equipment. Evaluate equipment and operating conditions to determine possible causes of premature pump failure. Results and recommendations were provided in letter reports and corrective actions have been implemented. TZA continues to assist THF Realty with operations and maintenance of the well and production equipment.

Summary of Expert Witness Testimony (2004)

Western Industrial Park, LLC v. Public Service Company of Colorado

Provide expert witness testimony related to all field activities and analysis performed by TZA Water Engineers to prove that an inlet canal (Legett Inlet Canal) was poorly maintained. Public Service Company of Colorado operated the canal. The poorly maintained canal damaged property owned by Western Industrial Park, LLC.

List of Technical Presentations/Papers

1. Method and Apparatus for Enhancing Well Performance (US Patent No. 5,988,284). Inventor of patent granted November 23, 1999.

2. Techniques For Improving Yield and Reducing Operating Costs for Wells Completed in Confined Aquifers. Presented at Troubled Waters Conference. Lakewood, Colorado. November 28, 2001.
3. Wells, Pumps and Aquifers. Presented at Colorado Rural Water Association Management and Operations Seminars. Various Locations throughout Colorado. August 30 and November 30, 2001, February 21, May 17, June 7, and November 29, 2002, and April 28, 2003.
4. Wells, Pumps and Efficient Operation & Maintenance. Presented at Action Now Seminar. Canon City, Colorado. Canon City, Colorado January 22, 2004
5. Wells and Aquifers. Presented at Rocky Mountain Water and Wastewater Plant Operators School. Boulder, Colorado. March 26, 2004.