



David J. Brown, P.G.

Principal



Professional Credentials

Professional Geology License No. 566

Areas of Expertise

Project Management • Hydrogeology • Production Well Design and Testing • Groundwater Flow Modeling • Demand Management and Water Conservation • Stormwater Reuse • Expert Witness Testimony

Education

B.S., Geology, University of Florida, 1983

Project Experience

OVERVIEW – David J. Brown, P.G. has a broad professional background in geology, groundwater hydrology, and permitting. Since 1983, he has managed the technical aspects of water resource development and sustainability projects throughout the Southeastern United States, with particular emphasis in Florida. He has both public and private professional experience, enabling him to provide a straight forward and integrated approach to resource development and protection. He has successfully worked with, and provided technical input to, numerous public officials and agencies involved in water resource policy. In addition, his background includes groundwater modeling, stratigraphic interpretation, geophysical investigations, aquifer testing, ground and surface water quality monitoring, and TMDLs. Other areas of expertise include alternative water resource development, and irrigation efficiency.

Water Resource Development

Mr. Brown has managed the installation and performance testing of municipal drinking water, irrigation, and remedial recovery well systems, including statistical analysis of well yield, water quality and efficiency. He has supervised detailed hydrogeologic investigations, including supervision of related drilling, sampling, and geophysical investigations necessary for permit approval. He has designed and developed alternative water supply and recovery sources to offset and augment existing supplies. He has also design and supervised the installation of complex monitor well networks under strict regulatory guidelines. As a Senior Water Use Permit evaluator, he played a critical role in the overview and assessment of Hydrobiological Monitoring Plans for several large public water supply projects. He has participated in Intermediate Aquifer Systems studies, upper Myakka River watershed

analyses and authored sections in agricultural BMP manuals.

Water Quality

Mr. Brown has coauthored and provided technical expertise for the Shell Creek and Prairie Creek Watersheds Management Plan to provide reasonable assurance for Total Maximum Daily Loads. FDEP considers this effort a template for TMDL reasonable assurance plans throughout the state. In addition, he created the SWFWMD's Irrigation Well Back-Plugging Program to remediate poor water quality wells in the Southern Water Use Caution Area (SWUCA). His knowledge of borehole geophysics provided a clear plan of action and understanding of sustainable groundwater quality improvements. These same efforts have led to a better understanding of aquifer flow and water quality relationships.

Permitting

Throughout Mr. Brown's professional career, he has been involved in permit submittal and review of water resource projects. He has successfully submitted and received County, FDEP, and Water Management District permits for industrial, agricultural, public supply, and recreational/aesthetic projects. As a Senior Water Use Permit evaluator, he has reviewed and permitted water use projects throughout west-central Florida, with particular emphasis on public supply. Some of the larger public supply permits under his review include the Peace River/Manasota Regional Water Supply Authority, Manatee County's East County Wellfield, Sarasota County's Carlton Wellfield, the City of Venice, and various other municipalities in west-central Florida.

Facilitating Agricultural Resource Management Systems (FARMS) - While with the SWFWMD, Mr. Brown managed

the Facilitating Agricultural Resource Management Program and staff, including the development of Operating Agreements with other state agencies, assisting in obtaining over \$3.5 million in state appropriations and matching funds, designing program contracts and authored programmatic technical guidelines. Maintained programmatic budgets in excess of \$6 million and provided program performance audits for water management boards, elected officials and their representatives. FARMS is a BMP cost share reimbursement program for the water quantity and quality projects in the SWUCA.

Total Maximum Daily Loads: Co-authored the Shell Creek and Prairie Creek Watersheds - While with the SWFWMD, Mr. Brown developed a Management Plan to provide reasonable assurance documentation to address Total Maximum Daily Loads (TMDLs) in two Class I watersheds that supply drinking water to the City of Punta Gorda. Included in this effort was the organization of a diverse group of stakeholders, including federal, state, county officials, conservation and environmental groups, agricultural commodity representatives, local agriculturalists and property owners. Also developed and helped fund the two primary management actions to address TMDLs, the FARMS and Irrigation Well Back-Plugging Programs. FDEP has accepted this plan as providing reasonable assurance.

Boran Ranch and Sod Water Use Permit Administrative Hearing - As the Senior Professional Geologist/Hydrologist for the SWFWMD recommending permit approval, Mr. Brown provided expert witness testimony in support of an increase in groundwater quantities for a Water Use Permit located in southwest DeSoto County. This effort required a coordinated interaction with both State and private legal counsel. In addition, Mr. Brown developed all courtroom graphics and groundwater flow models in support of the permit. The District prevailed and Mr. Brown's testimony provided evidence for successful decisions on subsequent administrative hearings.

Alternative Water Supply Development - Mr. Brown was essential to the development of alternative water supply sources from the Surficial Aquifer Systems in Charlotte and DeSoto Counties, FL. The understanding of hydraulic properties of unconfined sediments provided for a viable source of irrigation water for agricultural projects that had previously used highly mineralized groundwater. His irrigation supply system designs also included surface

water routing to facilitate rainfall capture, tailwater recovery, and reuse. His development of groundwater flow models simulating the dry season of shell pit excavations was instrumental to the understanding and permitting of these alternative supplies. In addition, he designed a program to test model simulated drawdowns and volumetric yield.

New Wales Chemical Complex - Mr. Brown helped develop photogrammetric techniques for analytical bridging of historical aerial photographs to locate improperly abandoned Class V injection or recharge wells that had been previously excavated by mining activities decades earlier. These wells, located in and around the chemical complex, had to be located and investigated as potential sources of contamination to the upper Floridan Aquifer System. The successful discovery and proper abandonment of these well not only prevented future contamination, but also proved to be extremely cost-effective due to the accuracy of the location data.

Irrigation Efficiency Projects - Mr. Brown has been instrumental in the incorporation of technology to increase irrigation efficiency. The use of integrated real-time data acquisition and irrigation pump control systems has proven highly successful. These systems are considered win-win projects in that they reduce water use, reduce nutrient leaching, and reduce fuel consumption. The understanding of soil-water interactions has proved invaluable to the agricultural industry.