Name & Title:	**Project Assignment:**
Stephen Reich, Supervising Engineer / Hydrogeologist	Supervising Engineer
Years of Experience with Firm:	**Years of Experience With Other Firms:**
23	1
Education: Degree(s) / Year / Specialization:	**Registrations / Certifications:**
M.S. / 1989 / Geophysical Engineering, Colorado School of Mines, Golden, Colorado B.S. / 1985 / Geophysical Engineering, Colorado School of Mines, Golden, Colorado	Civil Engineer No.C58713, California

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DATE: _____

Experience Record

Stetson Engineers Inc.

Arbitrator

Currently serving as the sole arbitrator of a ground-water pumping dispute between the Los Angeles Department of Water and Power and Inyo county. The dispute is based on the interpretation of legal and technical agreements between the two parties regarding the amount of ground water that may be pumped from the Owens Valley, California. Review of complicated reports that discuss the impact of pumping on ground-water hydrology and ecological and biological maintenance.

Feasibility Analysis

As author and project manager, directed all engineering, hydrologic, hydrogeologic, environmental tasks involved in the completion of the Santa Margarita River Recharge and Recovery Enhancement Program. This project combined the complex engineering and environmental studies required to maximize the ground-water production from a ground-water basin without harming the 16 endangered species that live within the riparian corridor and associated estuary of the Santa Margarita River. Currently participating in the completion of the environmental documentation associated with this project.

Municipal Water Systems

- Participating as a member of a Technical Committee, worked directly with private developers and the Contra Costa Water District in analyzing the buy-in charges for new customers. As an expert witness, contributed to the review of the Contra Costa Water District's raw and treated water infrastructure including their pipe network system, reservoir, pumping plant, and canal structures. In order to determine the District's value, coordinated data acquisition and analysis of available documents and maps in order to complete a thorough final report relating to the applicability of the District's charges.
  (Private client, Contra Costa Rate Study, 1993-1998)
- Acting for the San Francisco Bay Area Water Users Association, oversaw the monitoring of water supply and delivery of water to numerous entities that purchase Hetch Hetchy water from the City of San Francisco.
  (BAWUA Water Delivery Monitoring Program, 1992-1996).
- As a member of the Stetson technical team consulting the Ute Indian Tribe in Utah, responsible for the gathering and interpreting geological data relevant to determining the location of a future dam site. Responsibilities included identifying and describing geologic hazards at thirteen potential dam sites both on and off the Reservation.
  (Dam Site Feasibility Study, Ute Indian Tribe, Uintah Indian Tribe, 1994).

Water Quality Oversight

Working together with The Nature Conservancy and San Diego State University riparian ecologists, biologists, and hydrologists, led efforts in monitoring the "ecological health" of a river. The purpose of these efforts has been to monitor the health of river while at the same time meeting the municipal water demands of downstream water rights holders. Other studies involved with this task include the oversight of geomorphology and hydraulic studies associated with the characterization of a river.

Water Rights Negotiations

Technical lead for the United States and the Marine Corps Camp Pendleton in the settlement of one of the longest running (76 years) water rights disputes in California. Using technical studies prepared by experts in numerous fields, developed the technical portion of a settlement agreement that allowed for the restoration of streamflow to satisfy both ecological demands and municipal demands. A MODFLOW ground-water model, a hydrologic model, and the classification of the riparian and biological habitat were just a few of the numerous studies that were used to establish the basis for settlement of a complex river system. The negotiated agreement acknowledges the beneficial use of water not only for human consumption, but also for ecological demands.

Steve Reich, Supervising Engineer / Hydrogeologist
(Continued)

Watershed Studies

- As project manager, oversee all hydrologic and hydrogeologic tasks relating to the adjudication of the Santa Margarita River Watershed. As the lead engineering firm for the U.S. Department of Justice, work directly with the U.S. Marine Corps Base Camp Pendleton, various Indian Reservations, the federal Watermaster, the U.S. Geological Survey, and Rancho California Water District personnel to develop solutions relating to all water resources in the Santa Margarita River Watershed.
  (U.S. Department of Justice, Santa Margarita River Watershed, 1993 - ongoing).
- Analyzed numerous well logs in Riverside and San Diego Counties. Analysis of these data sets was used to delineate between underflow and percolating ground water under unconfined or confined conditions as well as determining hydrogeologic characteristics of the aquifers
  (U.S. Department of Justice, Southern California Ground-water Studies, 1993).
- Designed an integrated geophysical survey in the San Pedro River Basin in Arizona to delineate between underflow and percolating ground water. Using various DC electrical techniques as well as bore hole data, defined the lateral boundaries of the San Pedro River stream system
  (U.S. Department of Justice, San Pedro River Basin, 1994).

Water Rights Studies

As a member of the Stetson technical team consulting the Pyramid Lake Paiute Tribe, prepared documents on irrigation and land use status using aerial photographs and historic documents. Additionally involved with a cooperative effort between the Tribe, the U.S. Department of Justice, and the U.S. Bureau of Reclamation in identifying the transfer of water rights. Coordinated GIS data and other databases with relevance to legal and illegal irrigated lands.
(Pyramid Lake Paiute Tribe, Pyramid Lake Land Use Study, 1992 - present).

Water Wells/Drilling Expertise

- Responsible for the drilling and completion of a 1,300-foot water well on the Pechanga Indian Reservation, CA including the geological and geophysical logging of the well, determination of the screened interval, and pump testing of the well.
  (U.S. Department of Justice, Pechanga Reservation Ground-water Study, 1996).
- Responsible for the design, acquisition and interpretation of a seismic refraction survey to determine the suitability of a shallow ground-water supply on the Shivwitz Indian Reservation in Southwestern Utah. Additionally, five shallow bore-holes were drilled and incorporated in the interpretation of the final results.
  (U.S. Department of Justice, Shivwitz Reservation Ground-water Study, 1995).
- Designed and implemented both geophysical and hydrogeologic studies for the Southern California Water Company (SCWC). Working directly with their chief hydrogeologist, coordinated both field and office studies concerned with the design and location of new water wells within numerous ground-water basins throughout California. Additionally, analyzed some of SCWC's existing water wells in Edna Valley and Barstow for the determination of surface water influences and their pertinence to drinking water standards.
  (SCWC Water Well Studies, 1993-94)
- Worked as the on-site geologist during the drilling of a ground-water well in the City of Burlingame, California. Responsible for the collection and analysis of geologic samples, analysis of geophysical data, completion depth, and general field supervision. Completion of this well resulted in a dependable supply of irrigation water with a yield of 200 gpm.
  (City of Burlingame, Washington Park Irrigation Well Drilling, 1992)

Prior Experience

As an independent consultant, specialized in electrical methods applied to oil fields. Responsibilities included the design, implementation, processing, interpretation and presentation of transient electromagnetic data, as well as recommendations to the personnel responsible for choosing well site locations. While with the Western Geophysical Company of Houston, Texas, supervised 120-person field crews in Turkey for the acquisition of reflection and refraction seismic data. During this time in Turkey, drilled and logged over 200 shallow exploration holes. In London, England, processed and interpreted a three-dimensional survey used for the development of an existing oil field. Applied electromagnetic techniques to define alluvial and bedrock structures outside both Ely and Carlin, Nevada. Performed studies for theoretical modeling of electromagnetic data and its applications and supervised data acquisition for deep structural gas studies. Also worked as an on-site geologist for Exlog Inc. during the exploration of a 13,000-foot well in the Bering Sea.

EXHIBIT LIST

IN THE MATTER OF APPLICATIONS 53987 THROUGH 53992 AND 54003 THROUGH 54021 FILED BY THE SOUTHERN NEVADA WATER AUTHORITY TO APPROPRIATE GROUNDWATER IN SPRING VALLY, CAVE VALLEY, DRY LAKE VALLEY AND DELAMAR VALLEY

HEARING DATE: Scheduled for September 26, 2011 through October 14, 2011, and October 31, 2011, through November 18, 2011

		OFF.	AD.
LONG_Exh_001	Table of Contents and Introduction of the June 1990 Green Book addressing theLong-Term Groundwater Management Plan for the Owens Valley and Inyo County		
LONG_Exh_002	Report Cost of Mitigation at Owens Lake by Mr. Scott Thomas, PhD.		
LONG_Exh_002	Example - Long Now Protest to Water Rights Application 540003		
LONG_Exh_004	EXPERT REPORT Nevada State Engineer Water Rights Hearing, Spring Valley, Nevada - Soils		
LONG_Exh_005			

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