



## STATEMENT OF QUALIFICATIONS

**ALI SHAHROODY, P.E**

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*Principal*

Mr. Shahroody joined Stetson Engineers Inc. in 1967 and is currently the company President. He has participated in a wide range of investigations in water resources with an emphasis on computer modeling. He has worked on the evaluation of land capabilities, crop water use, and irrigation systems for the development of agricultural lands. Mr. Shahroody has been involved in the evaluation of municipal water uses, including assessing the adequacy and planning of distribution systems. He has also undertaken various investigations on flood damages. Mr. Shahroody has worked on projects in the States of California, Nevada, Oregon, Washington, Arizona, Montana, North Dakota and South Dakota. He is involved in the implementation of the settlement agreement and master water sales contract between the San Francisco Bay Area Water Users Association and San Francisco Water Department. Mr. Shahroody has been recognized in a Certificate of Appreciation from USEPA Region 9, 1996; for securing a collaborative agreement on operation of the Truckee-Carson River system between a Native American tribe, the State of Nevada, the Department of Interior (DOI), and the Environmental Protection Agency (EPA).

**EDUCATION:** M.S. Civil Engineering, University of California, Davis 1966  
M.S. Irrigation Science, University of California, Davis, 1962  
B.S. Agriculture, American University, 1960

**CREDENTIALS:** Civil Engineer No. 21252, California  
Agricultural Engineer No. 323, California  
Civil Engineer No. 26134, Arizona  
Civil Engineer No. 18554, Nevada

**PROFESSIONAL EXPERIENCE:** 46 years

### **SELECTED PROJECTS:**

#### **Water Rights**

##### *Truckee River System/Pyramid Lake*

- Mr. Shahroody has spent a significant portion of his career studying a broad range of issues on the Truckee River System in California to its terminus in Pyramid Lake in Nevada.
- Mr. Shahroody was directly involved in negotiations of the interstate agreement dividing waters of Lake Tahoe, Truckee and Carson Rivers between California and Nevada. The settlement negotiations culminated in Title II of Public Law 101-618 in 1990. The settlement act requires an agreement between the United States of America, States of California and Nevada, Pyramid Lake Paiute Tribe and Sierra Pacific Power Company for the operation of Truckee River system. Mr. Shahroody chairs the subgroup charged with drafting the Truckee River Operating Agreement (TROA).



- He was involved in settlement negotiations and completion of the preliminary settlement agreement between the Sierra Pacific Power Company and the Pyramid Lake Paiute Tribe involving operation of reservoirs (Lake Tahoe, Prosser Creek, Stampede, and Boca) on the upper Truckee River, California (1986 through 1989).

Mr. Shahroody has provided testimony, depositions, or affidavits in the following matters regarding the Truckee and Carson River system.

- *Pyramid Lake Paiute Tribe of Indians v. the City of Reno and Sparks*. He prepared affidavits on violations of water quality monitoring in the lower Truckee River required under the Consent Decree entered into between the Tribe, Cities of Reno and Sparks, and the U.S. Environmental Protection Agency on December 7, 1984. These affidavits were submitted to the U.S. District Court, Nevada, CV-LV-82-389-WEC (1987).
- *Pyramid Lake Paiute Tribe of Indians v. the Cities of Reno and Sparks and the United States Environmental Protection Agency*. Mr. Shahroody was extensively deposed by the cities of Reno and Sparks and by the Justice Department on the impact of effluent discharge from master project facilities of the Reno-Sparks Joint Water Pollution Control Plant on the water quality of the lower Truckee River and Pyramid Lake. He also prepared an affidavit on the violation of water quality standards in the lower Truckee River. The affidavit was presented on behalf of the Tribe to the U.S. District Court, Nevada, No. CV-R-85-025-HD (1987). The case is continued and a trial date has not been scheduled.
- *Pyramid Lake Paiute Tribe of Indians v. Secretary of the Interior, Truckee Carson Irrigation District*. He gave a pre-trial deposition on Operating Criteria and Procedures (OCAP) for the Newlands Project. He testified extensively during the weeklong hearing at the U.S. District Court, Nevada, Civil No. R-85-197-BRT (1987). He also testified on promulgation of the Temporary OCAP in 1986.
- *Pyramid Lake Paiute Tribe of Indians v. U.S. Department of the Navy*. He testified on behalf of the Pyramid Lake Paiute Tribe at the hearings in the U.S. District Court, Nevada on May 1, 1987 and September 9, 1987, Civil No. CV-R-86-115-BRT.
- *United States of America v. Alpine Land and Reservoir Company, et al.* He testified on behalf of the Pyramid Lake Paiute Tribe on classification of bench and bottom lands within the Newlands Project in the U.S. District Court, State of Nevada, Civil No. D-185-BRT (1986).
- *Nevada State Engineer's Hearings on Changes in Water Rights*. Mr. Shahroody has testified extensively in the Nevada State Engineer's hearings related to protests by Pyramid Lake Paiute Tribe and U.S. Bureau of Reclamation in connection with some 300 applications to transfer water rights in the Newlands Reclamation Project – 1984 through 1985, 1988 and 1993. The most recent hearing involved transfers of irrigation rights to municipal and industrial uses.
- *United States of America and Pyramid Lake Paiute Tribe of Indians v. Orr Water Ditch Company, et al.* He was informally deposed prior to an impending trial in the U.S. District Court, Nevada, in Equity No. A-3. Parties reached a stipulated settlement – 1984.



- *Truckee Carson Irrigation District v. the Secretary of Interior*. He presented an affidavit on behalf of the Pyramid Lake Paiute Tribe to the U.S. District Court, Nevada, Civil No. 74-34-BRT – 1983.
- *United States of America v. Board of Directors of Truckee Carson Irrigation District*. Mr. Shahroody testified as an expert witness for the U.S. Department of Justice in the U.S. District Court of Nevada on the recoupment of about one million acre-feet of water, Civil Case No. CV-N-95-0757-HDM (2002). He also prepared a recoupment plan for the Justice Department.
- He also testified in connection with the appropriation of ground water for power generation in the lower Truckee River basin by Duke Energy and specifically on impacts to surface flow in the river (2001).
- Mr. Shahroody has testified on change applications in purpose and manner of use and points of diversion of Orr Ditch Decree water rights involving Claims 1 and 2 of Pyramid Lake Tribe (2002) and Claim 3 of Newlands Reclamation Project (2004).
- Mr. Shahroody has reviewed extensively water conservation plans developed for the Newlands Irrigation Project (Truckee-Carson Irrigation District) and provided inputs on the installation of water measuring devices at the headgates and the assessment structure per acre of land to raise revenues for the Operation and Maintenance (O&M charges) of the Newlands Project.
- As a part of the Operating Criteria and Procedures (OCAP, 43 CFR Part 418) for the Newlands Irrigation Project, Mr. Shahroody is involved in the annual efficiency determination for the purpose of incentive credits created by the Truckee-Carson Irrigation District on the Project. The District can use or sell the incentive credit water resulting from increased efficiencies for beneficial uses.

#### *Santa Ynez River Water Conservation District*

- Mr. Shahroody is a member of the Santa Ynez River Technical Advisory Committee (TAC) on fisheries and water quality. He is also a member of the Santa Ynez River Hydrology Committee, representing Santa Ynez River Water Conservation District.
- He was involved in negotiations between California Department of Fish and Game, urban, environmental and federal interests and California State Water Resources Control Board on public trust concerns in connection with the protection of fisheries in the Santa Ynez River – 1993.
- He negotiated an exchange of Cachuma Project water for California State Project water between Santa Ynez River Water Conservation District, Improvement District No. 1, and the Santa Barbara coastal interests. This resulted in an exchange and water treatment agreement for the purpose of municipal use (1992).
- He negotiated for sale of an existing pipeline owned by the Improvement District No.1 to be used for conveyance of State Project water to Cachuma Reservoir (1992).
- He testified in California State Water Resources Control Board hearings in connection with a number of applications, permits, complaints on the Santa Ynez River in 1990. The hearings have been continued pending completion of an environmental impact report.



- He was directly involved in negotiations, settlement and completion of the Upper Santa Ynez River Operation Agreement between the City of Santa Barbara and the Santa Ynez River Water Conservation District and other interested parties for the operation of Gibraltar Reservoir on the Santa Ynez River, California (1988 and 1989).

#### *Globe Equity No. 59 (Gila River)*

- Mr. Shahroody testified on the complaint filed by the Gila River Indian Community in the U.S. District Court, Arizona in 1989. He testified extensively on the complaint and intervention filed by the San Carlos Apache Tribe in 1991. He testified on behalf of the U.S. Department of Justice.
- For the purpose of these trials, Mr. Shahroody co-authored four reports on review of the technical aspects of the Globe Equity No. 59 case, Gila Decree.
- He participated as the technical expert for the Department of Interior in the Upper Gila Negotiations conducted under Honorable Judge Michael Nelson (1999-2001)

#### *Las Vegas Valley Water District Application*

- Mr. Shahroody has evaluated Las Vegas Valley Water District's applications to the Nevada State Engineer to divert 500-700 cubic feet per second of water (70,000 acre-feet per year) from the Virgin River, Nevada. The evaluation was undertaken on behalf of the U.S. National Park Service, Bureau of Land Management, Fish and Wildlife Service and Bureau of Indian Affairs – 1992 and 1993. A stipulation between the parties was reached prior to the State Engineer's hearing on January 10, 1994.

#### *Cuyapaibe, et al., v. United States*

- Mr. Shahroody testified extensively in the United States Court of Claims, Docket 80-A-2, water claims against the United States. He testified on behalf of the Morongo, Santa Rosa, Pechanga, La Posta, and Cuyapaibe Mission Indians (San Diego and Riverside Counties) in 1992.

#### *Salt River in Arizona*

- *Herman Grey, et al. v. United States of America.* Mr. Shahroody testified on behalf of plaintiffs, Herman Grey, et al., regarding damages to land owners within the Salt River Indian Reservation as a result of excluding those lands from the Salt River Project in the United States Claims Court in March 1989, Civil No. 588-84L. In connection with the trial, he evaluated and prepared a report on the damages to land owners on the Salt River Indian Reservation by exclusion from the Salt River Project, Arizona (Salt River Pima-Maricopa Indian Community, 1989).
- He evaluated alternatives for receiving stored water from the Salt River Project (Horseshoe and Bartlett Reservoirs) by the Salt River Pima-Maricopa Indian Community, Arizona (Salt River Pima-Maricopa Indian Community, 1989).



### *Pauma and Pala Indian Reservations*

- Mr. Shahroody was involved in the negotiations between the La Jolla Mission Band of Indians in San Diego County and the U.S. Department of Justice on settlement of historical damages. In this connection, he evaluated the net benefits to the Cities of Escondido and Vista for the purpose of annual charges. The case was settled in 1992.

### *California Department of Justice*

- *Mojave Indian Tribe v. State of California*. Mr. Shahroody testified extensively on the boundary dispute on the Colorado River between California and Fort Mohave Indian Reservation. He testified at the trial on behalf of the California Department of Justice.

### **Surface Water Resources**

#### *Truckee River System, California/Nevada*

- Mr. Shahroody undertook an extensive evaluation of surface water resources of the Truckee and Carson Rivers in California and Nevada. This involved the use of computer models for the determination of flows in the lower Truckee River as well as the amount of water reaching Pyramid Lake under various operating conditions (U.S. Bureau of Indian Affairs, 1980 and 1987).
- He undertook evaluation and development of various Operating Criteria and Procedures (OCAP) for the Newlands Project for the purpose of meeting the fishery flow requirements proposed by the U.S. Fish and Wildlife Service for the lower Truckee River, Nevada (U.S. Bureau of Indian Affairs – 1984 and 1985).
- He is a member of the Truckee-Carson Technical Committee.
- He evaluated the historical operation of Truckee River by the court appointed Federal Water Master (U.S. Department of Justice, 1984).

#### *Santa Ynez River Water Conservation District*

- Negotiations with the U.S. Bureau of Reclamation for the amendment of the California State Water Resources Control Board (SWRCB) Order No. 73-37 affecting the operation of Cachuma Reservoir and the ground-water basins in the Santa Ynez River Valley, California (1988). This resulted in issuance of SWRCB Order No. 89-18 in 1989. (1988-1989)
- Mr. Shahroody developed the first computer model of the Santa Ynez River system, involving the operation of Jameson, Gibraltar and Cachuma Reservoirs and downstream ground-water basins (1970).

#### *Kerr Dam Operation*

- The Federal Energy Regulatory Commission (FERC) has issued a joint license to the Confederated Salish and Kootenai Tribes (Flathead Indian Reservation) and Montana Power Company (MPC) subject to the Secretary of Interior's conditions under Section 4(e) of the Federal Power Act. Mr. Shahroody reviewed the proposed operational plan of Kerr Dam and



supervised the development of computer models to represent operation of Kerr Dam (lower Flathead River) and Hungry Horse Reservoir (South Fork of Flathead River) (1991-present).

- He managed/coordinated a multidisciplinary team of hydrologists, botanists, wildlife scientists, and fisheries scientists to develop license conditions authorized by Section 4(e) of the Federal Power Act. This involved developing operational conditions to protect the Trust resources of the Tribes, including the evaluation determination of a variety of operating regimes. He is leading the team preparing comments to FERC's newly released Environmental Impact Statement (EIS) (1994-ongoing).

#### *Milford Hydropower Project*

- This investigation regards a relicensing application of a run-of-river hydropower project subject to the Federal Power Act's Section 4(e) and Section 10(e). The first section provides for conditions to protect Trust resources of the Penobscot Indian Nation while the latter section establishes annual charges for use of Trust land. Mr. Shahroody has led the team preparing the hydrological analysis of the Penobscot River in Maine and the evaluation of impacts attributed to the Milford Project, and will prepare the analysis of power generation revenues in order to determine the annual charges required under section 10(e) (Penobscot Indian Nation, Maine). (1994-1998).

#### *Pauma and Pala Indian Reservations*

- Mr. Shahroody evaluated surface and ground-water resources of the upper San Luis Rey River system relative to the La Jolla, Rincon, San Pasqual, Pauma, and Pala Indian Reservations (U.S. Department of Justice, 1984).
- He was involved in evaluation of the water resources and requirements of the La Jolla, San Pasqual, Yuima, Pauma, and Pala Indian Reservations, San Diego County, California (U.S. Bureau of Indian Affairs, 1977).

#### *U.S. Bureau of Indian Affairs*

- Mr. Shahroody developed a computer model for determination of fishery flow deficiencies at various reaches of the White River based on historical diversion by Puget Sound Power and Light Company, Washington (Native American Rights Fund, 1983 and 1984).
- He evaluated hydrology and water requirements of the San Xavier Indian Reservation, Arizona (1973); and Northern Cheyenne Indian Reservation, Montana (1978).
- He conducted preliminary review of potential surface reservoirs and water requirements on the Warm Springs Indian Reservation, Oregon (Confederated Tribes of the Warm Springs Reservation, 1985).
- He evaluated the water resources and requirements of the Muckleshoot Indian Reservation, Washington (Muckleshoot Indian Tribe, 1975).
- He developed a computer model for the White River and determination of benefits from Mud Mountain Reservoir to Puget Sound Power and Light Company, Washington (Muckleshoot Indian Tribe, 1973).
- He evaluated water resources and water requirements of the Santa Ysabel Indian Reservation, San Diego County, California (Santa Ysabel Indian Tribe, 1986).



- He evaluated water resources and water requirements of the Santa Ysabel Indian Reservation, San Diego County, California (Santa Ysabel Indian Tribe, 1986).

#### *City of Bakersfield, California*

- Mr. Shahroody developed a computer model on the Water Master operations and regulation of the Kern River entitlement of Kern Delta Water District, North Kern Water Storage District, Buena Vista Water Storage District, and City of Bakersfield in Isabella Reservoir, California (1981). This model was recently upgraded to evaluate acquisition of Hacienda Water District's rights by the City of Bakersfield (1993).
- He undertook determination of yields of the Kern River water rights of various canal companies owned by Tenneco West, California (1974); development of a mathematical model of production wells within the City of Bakersfield, California (1971); study of alternative cross-valley canals in southern San Joaquin Valley, California (1970); evaluation of the exchange of California State Project water for Kern River water (1969); and feasibility of water spreading in the Kern River flood channel, California (1967).

#### *California Department of Justice*

- Mr. Shahroody undertook a hydrologic investigation of Cummings Valley, Kern County, California 1969; and investigation of the swamp or overflow lands on the California side of the Colorado River and Fort Mojave Indian Reservation – 1970.

#### *Additional Projects*

- Mr. Shahroody developed a computer model for the Ventura River basin, California (City of Ventura, 1975).
- He evaluated surface water resources for Battle Creek Park, Shasta County, California (North American Towns, 1972).
- He performed an investigation of potential use of waste water in southern San Joaquin Valley for possible power generating stations, California (Southern California Edison Company, 1971).
- He studied the development, management, and use of water resources on public lands (Public Land Law Review Commission, 1969).
- Normalizing urban water use for temperature and precipitation in the service areas of Southwest Water Company for reporting to the California Public Utilities Commission (Southwest Water Company, 1967).

#### **Agricultural Engineering**

##### *Pyramid Lake Indian Reservation*

- Mr. Shahroody supervised the work on irrigation development plans for the Dodge Flat area (1988) and Smoke Creek Desert (1990) on Pyramid Lake Indian Reservation, Nevada.



#### *Pauma and Pala Indian Reservations*

- Mr. Shahroody determined historically irrigable lands (1894-1980) of the La Jolla, Rincon, San Pasqual, Pauma, and Pala Indian Reservations, San Diego County, California (U.S. Bureau of Indian Affairs, 1980).

#### *U.S. Bureau of Indian Affairs*

- Mr. Shahroody determined the water supply and irrigable lands on the Fort Berthold Indian Reservation, North Dakota, and the Rosebud Indian Reservation, South Dakota (Office of Water Research and Technology, 1977).

#### **Ground Water Resources**

##### *Santa Ynez River Water Conservation District*

- Mr. Shahroody was directly involved in the evaluation of ground-water resources as an alternative to Cachuma Project water, Santa Barbara County, California (Improvement District No. 1, 1974); development of operating criteria for Cachuma Reservoir, Santa Barbara County, California (1971); review of water requirements and alternative sources of water supply for the Lompoc area, California (1971); and determination of the surface and ground-water quality of the Santa Ynez River basin, Santa Barbara County, California (1970).

##### *Pauma and Pala Indian Reservations*

- Mr. Shahroody modified/applied the mathematical model developed by the U.S. Geological Survey for the Pauma and Pala basins, San Diego County, California (U.S. Bureau of Indian Affairs, 1983).

##### *City of Bakersfield, California*

- Mr. Shahroody utilized a U.S. Geological Survey mathematical model to evaluate the ground-water recharge program on 2,800 acres of land in southern San Joaquin Valley (1977).
- He was involved in preparation of an environmental impact report on a 2,800-acre ground-water recharge facility adjacent to the Kern River, Kern County, California (1983); an environmental impact report for use and disposition of property and water rights acquired by the City of Bakersfield from Tenneco West, Inc. in the settlement of litigation (1975).

##### *Additional Projects*

- *Daniel R. Gesick, et al. v. Baldwin Contracting Company, et al.* Mr. Shahroody was extensively deposed on his investigation and computer analysis of the February 17, 1986 flood in Butte Creek and the breach of the an embankment in the flood plain area utilized by the Baldwin Contracting Company for rock extraction. He testified on behalf of the Baldwin Contracting Company in the lengthy jury trial in the Superior Court of the State of California (County of Butte) in November 1988, Case No. 91108 (Consolidated with Case Nos. 93530 and 93679).





- *Rittenhouse v. U.S. Army Corps of Engineers*. Flood damages to the Rittenhouse property in relation to structures built by the Corps of Engineers on the San Gabriel River. He was deposed by the U.S. Attorneys, 1974.

### **Watershed Management**

- Mr. Shahroody evaluated Corte Madera Creek Flood Control Project constructed by the U.S. Army Corps of Engineers and the proposed extension of that project through the Town of Ross, California (Town of Ross, 1988 and 1989).
- He performed an investigation of floods of Big Tujunga Wash, Los Angeles County, California, for January and February 1969 storms (City of Los Angeles, 1973).
- He evaluated erosion damage at Westborough common green areas in the City of South San Francisco, California (City of South San Francisco, 1973).

### **Environmental Engineering**

#### *Santa Ynez River Water Conservation District*

- Mr. Shahroody was responsible for preparation of an environmental impact report on the diversion of water from the Santa Ynez River for recharging the Lompoc Plain ground-water basin, Santa Barbara County, California (1976).

#### *Cachuma Operation and Maintenance Board*

- He provided the hydrologic analysis for the Biological Assessment of the Cachuma Project operation in connection with the Southern Steelhead (endangered) in Santa Ynez River (1997-99).
- He supervised the technical work on model analyses used in the preparation of Environmental Impact Report for the California State Water Resources Control Board in connection with the USBR permits on the Cachuma Project (1999-2002).

### **Municipal Engineering**

- Mr. Shahroody led a project for the Pyramid Lake Paiute Indian Reservation and the cities of Wadsworth and Fernley, Nevada in regional planning regarding water supply, distribution, and wastewater treatment. This on-going project involves preparation of a Water System Master Plan; exploration and testing of South Wadsworth ground-water development potential; development and integration of a regional ground-water model; and a plan for local wastewater treatment and disposal for Wadsworth (1999-ongoing).

### **Water Utility**

#### *Southwest Water Company*

- Mr. Shahroody normalized urban water use for temperature and precipitation in the service areas of Southwest Water Company for reporting to the California Public Utilities Commission (Southwest Water Company, 1967).



#### *Ash Water Company*

- Stetson Engineers was directly involved in the acquisition of Tenneco West's assets and water rights of the Kern River by the City of Bakersfield (1976). Mr. Shahroody was involved in the valuation of Ash Water Company included in the acquisition.

#### *Building Industry Association v. Contra Costa Water District*

- Stetson Engineers reviewed and analyzed Contra Costa Water District's 1993 Facility Reserve Charge. Mr. Shahroody was deposed on the valuation of facilities and new customer charges.

#### *Bay Area Water Users Association (BAWUA)*

- Stetson Engineers was involved in the settlement agreement (1984) between the San Francisco Water Department (SFPUC) and the BAWUA representing twenty-eight water users in the Bay Area. Mr. Shahroody has been involved in the implementation of the Settlement Agreement and Master Water Sales Contract.

#### *Hearst Castle*

- Mr. Shahroody was involved in the valuation of water supply designated for dedication to the Hearst Castle (1993).