

CERTIFIED COPY

IN THE SUPERIOR COURT OF THE STATE OF CALIFORNIA

IN AND FOR THE COUNTY OF RIVERSIDE

DIAMOND FARMING COMPANY, a California)
corporation, and WM. BOLTHOUSE FARMS,)
INC., a Michigan corporation,)
)
) Plaintiffs,)
)

vs.

) No. RIC 353840
)

CITY OF LANCASTER, ANTELOPE VALLEY)
WATER COMPANY, PALMDALE WATER)
DISTRICT, PALM RANCH IRRIGATION)
DISTRICT, QUARTZ HILL WATER DISTRICT,)
ROSAMOND COMMUNITY SERVICE DISTRICT,)
MOJAVE PUBLIC UTILITY DISTRICT, DOES)
1 THROUGH 200, INCLUSIVE, AND ALL)
PERSONS UNKNOWN, CLAIMING ANY LEGAL)
OR EQUITABLE RIGHT, TITLE, ESTATE,)
LIEN, OR INTEREST IN THE PROPERTY)
DESCRIBED IN THE COMPLAINT ADVERSE TO)
PLAINTIFF'S TITLE, OR, ANY CLOUD UPON)
PLAINTIFF'S TITLE THERETO,)
)

) EXHIBITS
) A THROUGH G
)

) Defendants.)
)

) AND OTHER RELATED ACTIONS.)
)

DEPOSITION OF N. THOMAS SHEAHAN

Thursday, July 18, 2002

Jonnell Agnew & Associates

Certified Court Reporters • Legal Video Specialists

744 E. Walnut Street • Pasadena, California 91101
(626) 568-9854 • (800) 524-3376 • Fax (626) 568-9987

I N D E X

<u>WITNESS</u>	<u>EXAMINATION</u>	<u>PAGE</u>
N. Thomas Sheahan	By Mr. Bunn	6
Afternoon Session		93

E X H I B I T S

(All exhibits are bound separately.)

<u>DEFENDANTS'</u>	<u>PAGE</u>
A - Mr. Sheahan's old resume'	9
B - E-mail dated March 9, 2002 from Tom Sheahan to Mark and Rick	57
C - Time records of hours spent working on subject case by Mr. Sheahan's associates at Geomatrix	57
D - Mr. Sheahan's updated resume'	58
E - Index of Mr. Sheahan's files	67
F - E-mail dated July 13, attached to which are a letter report and a reference list	70
G - Mr. Sheahan's report, including a bound volume and a two-page transmittal letter dated July 16, 2002	70

QUESTIONS INSTRUCTED NOT TO ANSWER

<u>PAGE</u>	<u>LINE</u>
157	14

ANSWERS REQUESTED TO BE MARKED

<u>PAGE</u>	<u>LINE</u>
165	25

EXHIBIT A

N. THOMAS SHEAHAN

Position & Title Vice President,
Principal Hydrogeologist

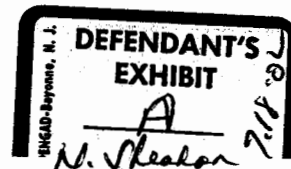
Home Contact Information Phone: (909) 698-4969
Fax: (909) 698-4367
Cell: (909) 260-5722
Address: 23909 Via Segovia, Murrieta CA 92562
E-Mail: ntsheahan@aol.com

Expertise & Experience Groundwater Flow and Well Hydraulics
Financial Allocation Among PRPs
Geochemical/Groundwater Resources Investigations
Borehole and Surface Geophysical Surveys
Litigation Support/Expert Testimony
Regulatory Interaction, Federal, State, Local
Remedial Investigations/Feasibility Studies
Well Design and Construction

Academic Credentials University of Missouri, Bachelor of Science in Geology and Geography, 1960
University of Arizona, Post-graduate courses in Groundwater Hydrology, 1961
Massachusetts Institute of Technology, Certificate in Advanced Groundwater Hydrology, 1967
University of La Verne, College of Law, Juris Doctor, 1978

Professional Licenses & Certifications	Registered Geologist,	California,	R.G.	682
	Certified Engineering Geologist,	California,	C.E.G.	307
	Registered Geophysicist,	California,	R.G.P.	757
	Certified Hydrogeologist,	California,	C.H.G.	119
	Attorney at Law,	California,	St. Bar	86443
	Registered Geologist,	Oregon,	R.G.	288
	Certified Engineering Geologist,	Oregon,	C.E.G.	288
Certified Professional Geologist, AIPG	National,	C.P.G.	2481	

Professional Affiliations Association of Engineering Geologists
American Institute of Professional Geologists (AIPG)
National Ground Water Association
- Past Director, Technical Division
- Past Chair of CGWP Certification Committee
California Groundwater Association
- Past State Secretary, Technical Division
- Past Director-at-Large, Southern California Section
California State Bar Association



N. Thomas Sheahan, Principal Hydrogeologist

Page 2 of 11

**Qualifications
Summary**

Mr. Sheahan has over forty years experience in geology, hydrogeology, geophysics, soil testing, groundwater flow, transport modeling, soil and groundwater remediation, water supply and well hydraulics. As Principal Hydrogeologist, he serves as the senior hydrogeological specialist for numerous projects involving geology, soils, hydrogeology, groundwater supply, geochemistry, and groundwater contamination. His experience includes hydrogeologic evaluation and financial allocation of sites located within federal Superfund areas, characterization and modeling of flow and transport of contaminated groundwater at industrial sites, fault studies, and consulting services involving local and state governmental agencies.

Recently, he has been involved in documenting and developing spring water sources under the 1995 FDA guidelines for a confidential spring-water bottling client. This work involves interpretation of state and federal regulations and guidelines, assessment of the hydraulic connection of spring-water harvesting facilities, geochemical studies, and conceptual design of collection, transport, and loading facilities. In this work, Mr. Sheahan interacts with the client's in-house and outside counsel, the spring resource managers, and with state and federal regulatory agencies.

Mr. Sheahan is called upon occasionally to provide litigation support to attorneys in a wide variety of scientific matters. He serves as expert witness in his areas of specialization, has served as court-appointed expert, and assists in evaluating technical issues consistent with legal strategies. In addition, Mr. Sheahan assists clients and their attorneys in financial allocation of remediation costs among other parties. For this purpose, he has developed computer-based groundwater flow and transport models, as well as other technically-based methods. He was instrumental in creating a series of seminars for expert-witness training of groundwater professionals presented by the National Ground Water Association.

As part of his professional practice, Mr. Sheahan provides consultation in nearly all aspects of development, protection, and evaluation of groundwater resources. Since 1972, he has concentrated on groundwater projects principally in the western United States, although past project locations have ranged from as far east as the Bahamas to as far west as Hawaii, Guam, and Okinawa. He has carried out groundwater investigations under local, state, and federal government agencies, as well as for numerous industrial companies, architect-engineering firms, and attorney clients. He has conducted seminars in hydrogeology, expert testimony, technical writing, oral communications, and other aspects of professional work.

He also provides public relations and administrative process support services for attorneys and clients in forums ranging from small community meetings to large, multiple-agency hearings. As technical consultant, Mr. Sheahan has been effective at assisting clients in pursuing matters through administrative processes.

He has served on the Faculty at California State University, Fullerton CA, as Lecturer and Instructor in Hydrogeology, teaching Senior- and Graduate Level Hydrogeology. He assisted the Professional Practices Committee of the California State Board of Registration for Geologists and Geophysicists, encouraging development of a State of California licensing program for Certification of Hydrogeologists in California. The State Board instituted this program in March 1995, the only state that has such certification, and Mr. Sheahan was confirmed as one of the first Certified Hydrogeologists in California.

N. Thomas Sheahan, Principal Hydrogeologist
Page 3 of 11

**Related
Experience**

Following are a few, selected projects conducted over Mr. Sheahan's professional career that generally depict the background and experience of Mr. Sheahan as a professional hydrogeologist.

Los Angeles, California.

Provided consulting services to Southern California Water Company in evaluating the life expectancy of their wells, assessing the relative well efficiency, determining well-rehabilitation needs and effectiveness, and developing a plan for well maintenance. Computerized the overall assessment program into a Well Optimization Program, including a database of all well data and programs for determining when to repair/rehabilitate/replace wells.

Mountain View, California.

Prepared an extensive Remedial Investigation and Feasibility Study at the Middlefield-Ellis Superfund site, Mountain View, California. Prepared a computer-based cost-allocation system for financial allocation of capital costs, operating cost, and maintenance costs among fifty-two sources from multiple potentially responsible parties.

Canyon Country, California.

Conducted a site investigation and prepared a remedial action plan for clean-up of trichloroethene-contaminated soil and groundwater at two pyrotechnics manufacturing facilities in Los Angeles County, California. Remediation included an injection-drain groundwater barrier, extraction wells, granular-activated-carbon treatment facilities, percolation ponds, and soil excavation and disposal plans. Provided expert witness services to attorneys in defending against environmental suits.

Richland, Washington.

Devised a groundwater monitoring strategy for the Basalt Waste Isolation Project, Richland, Washington, a geologic repository for radioactive waste. Provided direction to other consultants in modeling of long-term contaminant transport of groundwater containing radioactive waste. (See Selected Publications, 1982)

Redlands, California.

Investigated groundwater conditions in the Crafton-Redlands area, San Bernardino County, California, including evaluation of sources of dibromochloropropane and trichloroethene in the Bunker Hill Groundwater Basin, inverse contaminant-transport modeling of alternative scenarios to assess likely locations of initial contamination. Results of this study allowed regulators to focus state Superfund activities on the more-likely sites, and to eliminate other suspected areas from further concern.

El Centro, California.

Evaluated multiple sites in Imperial County, California, to select optimum locations for a proposed geothermal waste disposal site. Geophysical surveys, test drilling, and monitoring well construction were employed, along with geologic mapping, to establish the data base needed for site evaluation. Site selection criteria were defined, and each site was rigorously evaluated against the criteria to provide a site-ranking matrix.

Las Vegas, Nevada.

Conducted geochemical investigations of shallow aquifers in the Las Vegas, Nevada, area to evaluate infiltration conditions of an existing sanitary wastewater collection system for the purpose of providing input to the design of flow-system modifications.

Mount Charleston, Nevada.

Prepared a groundwater investigation and waste-management plan for communities in the vicinity of Mount Charleston, Nevada, involving flow in fractured rock, movement of contaminants in the vadose zone, and fate and transport of soluble waste materials.

Tucson, Arizona.

Served as Engineering Geologist for the Titan II Missile Project, Tucson, Arizona, involving assessment of deep-hole construction in fractured rock, development of groundwater supplies, and construction of underground facilities.

Seattle, Washington.

Conducted an investigation of the Cedar River Groundwater Basin for development of a 90-mgd well field for the City of Seattle, Washington. Studies of the 250 foot-thick aquifer system included geophysical investigation with refraction and reflection seismic methods, electrical resistivity profiling, test drilling, aquifer testing, and hydrochemical analyses. The work addressed water-rights issues, hydrologic budget, well-field design criteria, project cost estimates, and a proposed implementation program.

Santa Barbara, California.

Performed aquifer evaluation and computer flow modeling of the Santa Barbara Groundwater Basin, California. Designed improvements to the municipal groundwater supply system including wells, pumps, piping, and water treatment plant.

Othello, Washington.

Designed and constructed a deep, multi-zone, basalt groundwater supply well for the City of Othello, Washington, and performed testing and evaluation of other city wells and pumps. Recommended and implemented well rehabilitation to improve well efficiency and increase production.

Santa Cruz, California.

Conducted a conjunctive-use study of the lower San Lorenzo River Groundwater Basin, Santa Cruz County, California, to develop additional groundwater supplies for municipal use through recharge and underground storage of surplus surface water. Analyses of aquifer-test data indicated that extraction from wells could induce infiltration of surface water that would otherwise be lost to the ocean. Alternative projects included off-stream and in-stream percolation facilities, river diversion structures, and additional well fields for extracting groundwater and controlling infiltration and groundwater storage.

Morro Bay, California.

Performed a series of studies for the water-short community of Morro Bay, California, to aid in short-term and intermediate improvements to the municipal water supply. Assessment of subsurface outflow in the Torro Creek area, followed by test drilling and aquifer testing, disclosed substantial groundwater being lost to the ocean. Assisted the City in filing water-rights application to appropriate unused water, and developed programs for well-field installation to induce infiltration of surface water. Evaluated potential recharge sites to augment availability of groundwater. Designed and implemented well rehabilitation and water treatment systems for wells with high manganese concentrations.

San Jose, California.

Provided expert witness services to the Santa Clara County Water District, San Jose, California, in eminent-domain proceedings. District was successful in acquiring property for construction of a salt-water intrusion barrier. (See Selected Publications, 1976)

Los Osos, California.

Prepared a Groundwater Basin Management Plan for the Los Osos-Baywood park area of San Luis Obispo County, California, including evaluation of safe yield and recommendations for resource development. Also prepared a Water Quality Management Plan for this area which included evaluation of water-quality impacts from on-site wastewater disposal systems, and provided solutions to the high-nitrate problem in the aquifer systems.

Stewartville, Minnesota.

Provided litigation support services to the City of Stewartville, Minnesota, in their suit against their design engineer for breach of contract in connection with design and construction of a new municipal well. Evaluated well design criteria, construction techniques, and well development methods leading to the sand-pumping problem, and assisted the City's attorney in obtaining a settlement favorable to the City.

Santa Maria, California.

Testified before a panel of California Department of Health Services experts on the issue of groundwater protection at the Casmalia Resources Class-I hazardous waste disposal facility. This facility, one of the last two Class-I facilities in California at the time, was alleged to be a significant and imminent health hazard to the community. Evaluations of the groundwater monitoring data, and data anomalies were used to support opinions concerning migration of contaminants off site through groundwater.

Torrance, California.

Evaluated the extent of BTXE contamination in groundwater caused by spills at a refinery in Torrance, California.

Memphis, Tennessee.

Designed and constructed deep and shallow wells for groundwater production and waste disposal in Michigan, Indiana, Virginia, Mississippi, Hawaii, and Guam. Served as well-design consultant on numerous wells throughout the United States.

Burbank, California.

Provided consultation to an aerospace manufacturing company concerning its site in the San Fernando Superfund area. Evaluated soil-matrix, soil-vapor, and groundwater conditions, and prepared an assessment of the site indicating that the site activities had not contributed to groundwater contamination in the area. Assisted the client and outside counsel in cost-allocation proceedings with other PRPs to an acceptable resolution.

San Fernando Valley, California.

At a metals-forming facility in located in the Burbank Operable Unit of the North Hollywood National Priorities List site (Superfund), took over interpretation of site subsurface data from another consultant to provide site and soil-groundwater contamination characterization in a politically and geologically complex environment. Evaluated groundwater chemical data to define the off-site sources of groundwater contamination beneath the site. Prepared a computer-animated, video presentation of the hydrogeological characteristics in the vicinity of the site for use in communicating with state and federal regulatory agencies, other PRPs, and special interest groups, and assisted in resolving financial allocation issues among the other PRPs in the Operable Unit.

Multi-Site Cost-Recovery Litigation

Provided litigation-support services to several major oil companies, a major electronics manufacturer, and a major air-conditioner manufacturer, through their attorneys, on separate cases seeking cost recovery from insurance companies for environmental damages. Sites included waste-disposal facilities, mining, refineries, service stations, manufacturing facilities, and smelting operations. Services provided included: document identification, acquisition, indexing and review; consultation with attorneys in case planning and issue identification; aerial-photo interpretation; time-of-occurrence calculations; and estimating time and cost of groundwater cleanup. Other activities included the following: managing of multiple technical teams; providing site-specific consultation; assistance at depositions of opposing experts; preparation of graphic evidence exhibits; and expert-witness services.

San Francisco, California.

Provided consulting services to attorneys representing a major semiconductor manufacturer in the San Francisco Bay area, in connection with the Middlefield-Ellis-Whisman Superfund (MEWS) site. Studies included evaluation of organic solvent contaminants in soil and groundwater and delineation of contaminant plumes in a complex hydrogeological environment. Performed computer modeling, water quality assessments, soil borings, monitor well construction, and aquifer testing, and developed other site information.

Southern California

Served as principal hydrogeologist on a series of projects addressing the potential for storing surplus surface water underground in desert areas of Southern California. This work involved consideration of potential benefits to both a confidential large land-holder and the Metropolitan Water District of Southern California.

Spring Water Investigations

Conducted several hydrogeological investigations at sites of mountain spring sources to document the springs and harvested water for "identity" purposes under the 1995 FDA Guidelines. Studies included characterization of springs and associated extraction facilities, evaluations of geochemical data for comparison of waters, hydraulic testing for connection between facilities, and preparation of reports for submittal to state and federal agencies, and others. Prepared conceptual designs for spring collection facilities, pipelines, and loading stations, and assessed the appropriate means for development of spring sources. Assisted in meetings with regulatory agencies concerning approval of sources as springs in accordance with the state and federal regulations.

San Gabriel Valley Superfund Site

Assisted a confidential industrial client with a facility located within the Superfund site in assessing and minimizing liability. Conducted a series of Risk Assessments, using existing data that allowed a recommendation of No Further Action to the local enforcement agency, the Los Angeles Regional Water Quality Control Board. Prepared a financial allocation for nineteen potentially responsible parties (PRPs) based on existing site-related data, and assisted the client's outside counsel in negotiations to achieve settlement in the client's best interest.

South Bay, San Francisco

As consultant to a major water district, provided assistance in reviewing operations history of groundwater supply wells to determine appropriate means for rehabilitation. Provided an assessment of the nature and causes of reduced production and efficiency, and for corrosion and encrustation of well/pump components. Prepared specifications for implementation of a rehabilitation program to return the wells and pumps to optimum performance.

Tulare County, California

Served as technical consultant to the County's Resource Management Agency in reviewing Environmental Impact Reports and related documents regarding a proposed rock, sand, and gravel mining operation. The focus of review activities was on the hydrogeologic, water quality, and groundwater modeling efforts required. These services included preparation of technical memoranda of review, interacting with County staff and consultants to the applicant, and presentations to the Tulare County Board of Supervisors.

Palos Verdes, California

Conducted a series of studies for the Water Replenishment District of Southern California to assess the potential for providing groundwater recharge to the West Coast Groundwater Basin. The focus of the studies was on an existing gravel pit formerly used for rock, sand, and gravel mining. The studies involved drilling and testing of groundwater aquifer characteristics, geochemical analyses of groundwater, assessment of impacts from an associated inert landfill, fault studies, and modeling of the potential recharge program. In addition, an assessment was made of the potential and feasibility of using various water sources as recharge water. Sources included stormwater runoff, reclaimed water, and surplus Colorado River water from the Metropolitan Water District.

N. Thomas Sheahan, Principal Hydrogeologist
Page 8 of 11

**Employment
Summary**

Following is a summary of Mr. Sheahan's employment history presented in chronological order.

U.S. Army Corps of Engineers, **Kansas City, Missouri, & Tucson, Arizona**

Title: Engineering Geologist 1960 to 1962

Performed engineering geology and hydrogeology studies related to construction of the Titan II Missile Project. Activities included inspection of hard-rock excavations to 120 feet, surface and deep-hole mapping, materials testing, well drilling, and blasting evaluations. Also served as real-estate cartographer.

Woodward, Clyde, Sherard & Assoc., **Kansas City, Missouri**

Title: Engineering Geologist/Hydrogeologist 1962 to 1965

Served as engineering geologist/hydrogeologist for site investigations involving construction, dewatering, groundwater chemistry, and related matters. Activities included drilling, well construction, surface geophysical surveys, materials testing, and consultation.

Layne and Bowler, Inc., **Memphis, Tennessee**

Title: Research Groundwater Geologist 1965 to 1969

Provided in-house consulting services to fifteen (15) associated groundwater-development and well drilling companies throughout the United States, including Hawaii, Guam, Okinawa, and the Bahamas. Performed aquifer-test analysis, well design, modeling, groundwater-basin studies, borehole geophysics, evaluation of water resources, research for well design and construction, and training of professional and technical staff in hydrogeology and well construction.

Layne Northern Company, **Lansing, Michigan**

Title: Senior Groundwater Geologist 1969 to 1972

Served as consultant to municipalities and industries in groundwater development, well design and construction, management of water resources, geophysical surveys, groundwater modeling, design and construction of water-treatment systems, site investigations for environmental conditions, and water-system construction.

Brown and Caldwell Consulting Engineers, **Pasadena, California**

Title: Chief Geologist 1972 to 1984

Provided technical management of the geosciences activities for multiple offices. Managed various projects in connection with water supply development, waste disposal, facility design, environmental site assessments, hydrogeology, and construction of water/wastewater treatment plants. Activities included site investigations for groundwater development, well design, water-treatment-plant design and construction, off-shore geophysics for outfall design, groundwater modeling, and conjunctive-use studies for potable and reclaimed water. Conducted projects in California, Nevada, Oregon, Washington, and Arizona.

Woodward Clyde Consultants,

Santa Ana, California

Title: Shareholder, Chief Hydrogeologist 1984 to 1986

Served as Manager of the Hydrogeology Group for the Western Division, and Senior Consultant on various projects. Activities included project management for soil- and groundwater-contamination projects, aquifer-test analysis, evaluation of groundwater basins, geophysical investigations, geochemical studies, and groundwater well design for production and monitoring. Directed activities of hydrogeologists, geologists, and engineers involved in waste management, water-supply development, and construction dewatering projects.

Geraghty & Miller, Inc.,

City of Industry, California

Title: Vice President, Senior Consultant 1986 to 1990

Managed all Southern California Operations for the corporation, including offices in the City of Industry and Newport Beach. Served as Senior Project Advisor and Principal Hydrogeologist on various projects and as Project Officer for all projects performed in Southern California. Managed major projects for large, national clients involving all aspects of work, including site investigations, facility design, regulatory interaction, and litigation-related services. Major technical accomplishments included preparation of a comprehensive Remedial Investigation, Risk Assessment, Feasibility Study, and PRP Financial Allocation for a Superfund project in Northern California, development of database management systems for water chemistry data in all of southern California for the Metropolitan Water District, design and construction of groundwater remediation facilities within the San Gabriel Valley Superfund Site area, and development of groundwater resources for the city of Morro Bay.

Dames & Moore and URS Corporation,

Rancho Cucamonga, California

Title: Vice President, Principal Hydrogeologist 1990 to 2002

As Vice President and Principal Hydrogeologist for Dames & Moore, and later for URS Corporation (Dames & Moore was acquired by URS Corporation in 1999), Mr. Sheahan provided principal-level consultation to clients and senior project managers on projects involving hydrogeology, water resources, engineering geology, geophysics, geochemistry, and modeling of groundwater flow and contaminant transport. Mr. Sheahan managed major projects involving soil and groundwater contamination, provided litigation support to clients and their attorneys, and technically directed senior and mid-level professionals on related projects. He served in the following capacities: Geosciences Unit Leader, San Gabriel Valley; Lead Consultant for Geosciences in Southern California; Managing Principal-in-Charge of San Gabriel Valley Operations; Lead Consultant for the Ontario CA and Rancho Cucamonga CA offices; Principal Hydrogeologist for the General Engineering & Consulting Division, and Principal Hydrogeologist and Vice President/officer of Dames & Moore and of URS Corporation.

N. Thomas Sheahan, Principal Hydrogeologist
Page 10 of 11

**Military
Experience**

United States Air Force

(MOANG, AZANG, USAFR)

Rank: Airman First Class,
SN/Desig.: AF27540863/20650-Air Photo Intelligence

Service Dates: December 1956 - December 1962
Honorable Discharge December 1962

Trained as Specialist in Air Photo Intelligence, Air Operations Intelligence, and Air Photo Interpretation. Served as air photo interpretation specialist at Tactical Reconnaissance Squadron level. Performed initial interpretation of vertical and oblique air photos from "wet" negatives to provide immediate information for intelligence planning. Performed stereoscopic and photogrammetric evaluations of air photos; calculated sizes, dimensions, and details of facilities and surface features; identified military equipment types; calculated rates of vehicular movement; evaluated photogeology of soil and rock conditions; and mapped vegetation in investigation areas.

Special service with U.S. Army, 101st Airborne Div., for Pine Cone II War Games.

United States Navy

(USNR, Kansas City, MO and Memphis, TN)

Rank: Lieutenant JG,
SN/Desig.: 693053/1635-Special Duty Intelligence

Service Dates: April 1965 - February 1968
Honorable Discharge February 1968

Commissioned as Special Duty Intelligence Officer. Served as team member with special-focus Office of Naval Intelligence (ONI) unit conducting evaluations of domestic and foreign sites. Developed strategic information, prepared intelligence assessments, and provided information to other units of ONI. Prepared maps from air photos, conducted analyses and evaluations of coastal and inland waterways, evaluated beach conditions, assessed political characteristics of foreign sites, and provided input to other ONI strategic defense activities.

N. Thomas Sheahan, Principal Hydrogeologist

Page 11 of 11

**Selected
Publications**

Following are a few of the publications authored or co-authored by Mr. Sheahan. These papers have appeared in national publications of various professional and scientific organizations.

Sheahan, N.T., 1966. Determining Transmissibility from Cyclic Discharge. *Ground Water*, Journal Technical Division, NGWA.

Sheahan, N.T., 1967. A Non-Graphical Method of Determining u and $W(u)$. *Ground Water*, Journal Technical Division, NGWA.

Sheahan, N.T., 1971. Type-Curve Solution of Step-Drawdown Test. *Ground Water*, Journal Technical Division, NGWA.

Sheahan, N.T., 1972. The Value of Hole Caliper in Groundwater Exploration and Well Construction. *Proceedings*, American Water Works Association, Proceedings of Annual Meeting, Michigan Section.

Sheahan, N.T., 1976. Injection/Extraction Well System -- A Unique Seawater-Intrusion Barrier. *Proceedings*, Third National Groundwater Quality Symposium, U.S. Environmental Protection Agency, *Ground Water*, Journal Technical Division, NGWA.

Sheahan, N.T., 1980. Legal Liability Associated with Reclamation. *Proceedings*, Ground Water Pollution and the U.S. Judiciary System, Fifth National Groundwater Quality Symposium, U.S. Environmental Protection Agency, *Ground Water*, Journal Technical Division, NGWA.

Sheahan, N.T., Leonhart, L.S.*, DeLuca, F.A., and West, L.M., 1982. Devising a Groundwater Monitoring Strategy for a Geologic Repository for Radioactive Waste. *Ground Water Monitoring Review*, Technical Division, NGWA. (* Principal Author.)

Sheahan, N.T., Spellman, H.R.*, Shlemon R.J., Stellar J.R., and Mayeda, S.H., 1984. Trenching and Soil Dating of Holocene Faulting for a Water Filtration Plant Site, Sylmar, California. *Bulletin of the Association of Engineering Geologists*, Vol. XXI, No. 1, February. (* Principal Author.)

Sheahan, N.T.*, and J.G. Zukin, 1993. Developing Spring Water Under the Proposed FDA Rules. *The Professional Geologist*, a Publication of the American Institute of Professional Geologists, Volume 30, Number 8, July. (* Principal Author.)

Sheahan, N.T., 1993. The Environmental Consultant: A Toolbox for the Attorney. *The Professional Geologist*, a Publication of the American Institute of Professional Geologists, Volume 30, Number 10, September.

Sheahan, N.T.*, and J. Minneci 1996. Optimizing Water Well Productivity and Operating Costs. *WATER/Engineering & Management*, a Publication of Scranton Gillette Communications, Inc., May. (* Principal Author.)