

AGWA - AGWT Annual Conference

“Everything aquifers and groundwater management”



Monday, February 11, and Tuesday, February 12, 2019
Gateway Hotel, 2200 East Holt Boulevard, Ontario, California 91761



See website for field visit opportunity to Regional Recycled Water Program (transportation not provided)

Background

The first AGWA/AGWT joint conference was held in Ontario, CA in 2000. Since then, this annual event has provided an important information exchange and networking opportunity for California’s water agencies, utilities and water districts, and for all water professionals (scientific, engineering, managerial, legal, environmental, regulatory), end-users of water, and local and state elected officials involved with water policy issues. The focus of every program is on current groundwater management issues in California.

Continuing Education

AGWA-AGWT Conference Approved for CA Drinking Water Operators - 8 CE hours
Regional Recycled Water Advancement Purification Center Tour Approved for CA Drinking Water Operators – 2 CE hours

2019 Conference Sponsors



Regional Recycled Water
Advanced Purification Center

POST-CONFERENCE TOUR

Wednesday, Feb. 13th - Sign-up: www.agwt.org/events

9:30 am -11:30 am

Joint Water Pollution Control Plant,
24501 S. Figueroa Street, Carson, 90745

Learn about the Advanced Purification Center. A new demonstration facility that tests an innovative process to purify wastewater for groundwater replenishment. It could lead to a full-scale program that purifies 150 million gpd and replenishes four groundwater basins in Southern California, making it one of the largest of its kind in the world. The program is a partnership of The Metropolitan Water District of Southern California and the Sanitation Districts of Los Angeles County.



Monday February 11, 2019

7:30 – 8:30 REGISTRATION (Coffee & pastries – network with exhibitors)

8:30 – 8:40 OPENING REMARKS FROM AGWA AND AGWT
Anthony Zampietro, Chairman, Association of Ground Water Agencies
Andrew Stone, Executive Director, American Ground Water Trust

8:40 – 9:10 KICK-OFF PRESENTATION
METROPOLITAN WATER DISTRICT: UPDATE ON SOUTHERN CALIFORNIA REGIONAL GROUNDWATER CONDITIONS
Matthew D. Hacker, Senior Resource Specialist, Metropolitan Water District, Los Angeles, CA

9:10 – 9:40 THE ELUSIVE SUSTAINABILITY OBJECTIVE
GROUNDWATER SUSTAINABILITY PLANNING: GROUNDWATER MODELING TO EVALUATE GROUNDWATER/SURFACE WATER INTERACTIONS AND CLIMATE CHANGE IMPACTS
Abhishek Singh, PhD, PE, Manager - California Operations, Senior Water Resources Engineer, INTERA Inc. Torrance, CA and Bryan Bondy, PG, CHG, Bondy Groundwater Consulting, Inc., (co-author recognition - David Jordan, PE, INTERA Inc.)

9:40 – 10:10



KEYNOTE PRESENTATION
NEW FUNDING FOR STORMWATER CAPTURE
Daniel Lafferty, JD, PE, Deputy Director, Water Resources
LA County Public Works, Los Angeles, CA



In the November 6, 2018 ballot, LA County Flood Control District voters approved a "parcel tax" of 2.5 cents per square foot of land impermeable to water, such as buildings, driveways, and concrete. Proceeds from the Tax (projected as \$300,000,000 annually) will be used to fund projects including increasing stormwater capture and reducing urban runoff pollution to increase water supply and to improve water quality.

Dan began working for the Department in 1986. In addition to his current assignment in the Environmental Programs Division, he has worked in the Water Resources, Watershed Management, Waterworks, and Sewer Maintenance Divisions and has served as the Department's Disaster Services Coordinator. He earned a Bachelor of Science in Civil Engineering degree from Marquette University and a Juris Doctor degree from Loyola Law School. Dan is a registered Professional Engineer in the State of California and a member of the California Bar.

10:10 10:30 BREAK (network with exhibitors)

10:30 – 12:00 Session 1
IDENTIFYING, QUANTIFYING AND DEALING WITH CONTAMINANTS OF EMERGING CONCERN (CECs)
(Including 1,2,3-TCP, hexavalent chromium, PPCPs, PFAS, perchlorate, 1-4,dioxane, NDMA and others!) Water agencies are faced with an urgent need to respond to concerns about health issues, property values, remediation options and infrastructure costs related to the identification, measurement and treatment of these compounds.
Moderator: Rick Zimmer, Senior Account Manager, Eurofins Eaton Analytical, LLC, Monrovia, CA
CECs IN THE LOS ANGELES (CENTRAL/WEST) BASIN
Brian Partington, PG, CHG, Senior Hydrologist, Water Replenishment District of Southern California, Lakewood, CA
CECs IN THE ORANGE COUNTY GROUNDWATER BASIN
Patrick Versluis, Director of Water Quality, Orange County Water District, Fountain Valley, CA
CECs IN THE SAN GABRIEL BASIN
Randy Schoellerman, PE, Assistant Executive Director, San Gabriel Basin Water Quality Authority, West Covina, CA

12:00 – 1:00 LUNCH (provided)



1:00 – 2:20 -

Session 2

PASO ROBLES BASIN - FIRST JURY TRIAL OVER GROUNDWATER RIGHTS IN CALIFORNIA

A Santa Clara County Superior Court jury found on Sept. 24, 2018 that a group of public water suppliers in San Luis Obispo County had the right to pump groundwater from a large groundwater basin in San Luis Obispo and Monterey Counties. The four-week trial pitted agricultural interests against public water suppliers during a time of extreme water tension due to drought and drought-like conditions in the State. What comes next?

Anthony Brown, CEO & Principal Hydrologist, Aquilogic, Costa Mesa, CA
Jeffrey V. Dunn, JD, Attorney, Partner, Best Best Krieger Law, Irvine, CA

2:20 – 3:50

Session 3

THE CLOUD & WATER RESOURCES MANAGEMENT

Moderator: Tony Morgan, PG, CHG, Market Leader – Water Planning & Development, Geo-Logic Associates, Santa Barbara, CA

In the natural hydrologic system, water moves from the meteorological clouds to aquifers. In the modern management of groundwater, the movement of hydrogeological data is from the ground to the cyberspace cloud. Management is the key to groundwater sustainability. Does the “cyberspace cloud” help?

NEXT GENERATION GROUNDWATER LEVEL INFORMATION SYSTEMS: EXTENDING WELL DATA NETWORKS BEYOND THE WELLFIELD TO INFORM OPERATION AND MANAGEMENT DECISIONS

Chuck Dunning, PhD, PG, Vice President Business Development, WellIntel, Milwaukee, WI

HELPING GSAS ACHIEVE SUSTAINABILITY USING FOCUSED GROUNDWATER MANAGEMENT SOFTWARE

Aaron Collier, PG, Vice President, Collier Consulting, Stephenville, TX

DEVELOPING A COMPREHENSIVE DATA MANAGEMENT SYSTEM FOR INDIAN WELLS VALLEY - PAINFUL BUT NECESSARY

Tim Parker, PG, CEG, CHG, President, Parker Groundwater, Sacramento, CA

3:50 – 4:00

BREAK

(network with exhibitors)

4:00 – 5:30

Session 4

DOWN-HOLE TECHNOLOGY FOR EFFICIENT GROUNDWATER PUMPING, RECHARGE AND WATER QUALITY CONTROL

Water engineers, consultants and agency managers can benefit from technology updates about what happens down a well. Water wells are engineered holes in the ground. The equipment that is selected for pumping, recharge and for refining well design can have significant economic impacts on construction and operation costs. Drawing up specifications for wells is best done with an understanding of equipment options and awareness of how advance information of subsurface geochemistry can inform pumping and treatment decisions.

Moderator: Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH

RAPID HIGH RESOLUTION ZONAL AQUIFER GEOCHEMISTRY AND FLOW DOWN TO 3000 FEET

Noah Heller, President, Best Environmental Subsurface Science and Technologies, San Rafael, CA

THE DESIGN AND OPERATION OF DOWNHOLE VALVE EQUIPMENT FOR EFFICIENT OPERATION IN AQUIFER STORAGE RECOVERY WELLS

Kent Madison, President, 3RValve LLC, Echo, OR

THE WELL PUMP IS THE HEART OF GROUNDWATER SYSTEMS: HOW TO SELECT THE RIGHT PUMP AND SIMPLE ROUTINE DIAGNOSTICS TO KEEP YOUR PUMP HEALTHY

David Kill, PE, Training Consultant, Xylem Goulds Water Technology, St. Paul, MN

5:30 – 7:00

RECEPTION – Sponsored by Raymond Basin Management Board (Cash bar)
(network with exhibitors)



Tuesday February 12, 2019

7:30 – 8:30 REGISTRATION (network with exhibitors)

**8:30 – 10:00 Session 5
CHALLENGES TO ENSURING SAFE SUSTAINABLE GROUNDWATER SUPPLY IN RURAL AREAS OF CALIFORNIA**

Water Supply responsibilities in California extend beyond providing for the needs of the major irrigation industries and the water agencies with large service populations. The more rural areas of the state also have sustainability and water quality issues. As more people are choosing to live in the foothills and in areas away from major urban centers and the reach of pipelines, there needs to be a closer focus on how groundwater professionals can help maintain affordable and safe water supply for small systems and homeowners.

Moderator: Kevin McGillicuddy, P.G., Roscoe Moss Company, Los Angeles, CA

PFAS: WIDE-RANGING SOURCES AND IMPACTS TO CALIFORNIA WATER SUPPLIES

Gregory Schnaar, PhD, Principal Environmental Scientist, Daniel B. Stephens & Associates, Washington, DC

GROUNDWATER MANAGEMENT IN FRACTURED ROCK AQUIFERS SERVING RURAL NEIGHBORHOODS, VINEYARDS, FARMS AND RANCHES

Stephen J. Baker, PG, HG, Hydrogeologist, Living Water® programming, Nevada City, CA

SOLVING WATER SUPPLY CHALLENGES FOR CALIFORNIA'S SMALLER COMMUNITIES

Dan Demoss, Executive Director, California Rural Water Association, Sacramento, CA

10:00 - 10:30



**INVITED PRESENTATION FROM CALIFORNIA'S
GROUNDWATER INFORMATION GURU**



WHERE AND HOW TO GET INFORMATION:

CALIFORNIA WATER LIBRARY AND THE GROUNDWATER EXCHANGE

Chris Austin, Maven's Notebook, The Groundwater Exchange, California Water Library, Santa Clarita, CA

Chris is the founder and publisher of the independent Maven's Notebook website, a comprehensive source for California water news and information. She is dedicated to providing unbiased information about California water issues. The water news source reaches thousands of regular readers and water leaders throughout the state. She has earned a reputation among the state's agricultural, environmental and water stakeholders for unbiased, complete, timely and accurate reporting and news curation. Chris has a decade of experience writing and aggregating California water news for multiple websites. In addition to writing original content and aggregating news for Maven's Notebook, Austin also contributes water-related content to Capitol Weekly, Estuary News, KCET SoCal Connected, and Zócalo Public Square.

10:30 – 10:50 BREAK (network with exhibitors)

**10:50 – 12:20 Session 6
WATER AGENCY/WATER DISTRICT: COMMUNICATION, OUTREACH AND EDUCATION INITIATIVES
WHY THEY ARE NEEDED AND HOW SUCCESS IS MEASURED**

Why do water agencies invest in education programs? What are the benefits from having the customer base understand where their water comes from and how it is delivered? How do agency educators decide on their targets? Is "outreach" different from "education" and is there a dividing line between public relation programs and education? What initiatives are shown to be effective and how can their effectiveness be assessed?

Moderator: Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH

Gina Ayala, Principal Communications Specialist, Orange County Water District, Fountain Valley, CA

Tim Barr, Deputy General Manager, Western Municipal Water District, Riverside, CA

Adrian Hightower, PhD, Education Unit Manager, Metropolitan Water District, Los Angeles, CA

12:20 – 1:20 LUNCH

**1:20 – 2:50 Session 7
GEOPHYSICS AT THE FRESH WATER/SALT WATER INTERFACE OF SOUTHERN CALIFORNIA'S COASTAL AQUIFERS**

Coastal groundwater conditions in Southern California range from freshwater discharge off-shore, uncontrolled salt water intrusion through multilayered and faulted aquifer systems, and relic intrusion plumes trapped behind fresh water barrier well systems. Data from electrical resistivity and time domain electromagnetic induction from airborne geophysical investigations can provide valuable information for characterizing and modeling saline/freshwater dynamics at coastal and inland sites.

Moderator: John Jansen, Senior Geophysicist/Hydrogeologist, Collier Consulting, West Bend, WI

GROUNDWATER DISCHARGE & SALT WATER INTRUSION ALONG THE SOUTHERN CALIFORNIA COAST

John Jansen, PhD, PG, PGp, Senior Geophysicist/Hydrogeologist, Collier Consulting, West Bend, WI

AIRBORNE GEOPHYSICAL INVESTIGATIONS OF SALT WATER INTRUSION ALONG COASTAL CALIFORNIA

Theodore Asch, PhD, PGp, Research Geophysicist, Aqua Geo Frameworks, LLC, Lakewood, CO

SALT WATER & FRESH WATER INTERACTION AND AIRBORNE ELECTROMAGNETIC SURVEYING

Max Halkjaer, Hydrogeologist, Geophysicist, Ramboll Group, København S Denmark

2:50 – 3:00 BREAK (network with exhibitors)

3:00 – 4:30

Session 8

SGMA FEE ISSUES:

HOW TO FUND GSA IMPLEMENTATION, GSP PROJECTS ETC. HOW TO AVOID PROP 218 PITFALLS

As GSAs push to meet the upcoming GSP deadline, it is critical not to overlook funding practices. How will your GSA employ its fee authority to fund the GSA and GSP? What are other GSAs doing to guarantee funding is available for GSP implementation? This panel dives into the nuts and bolts of fee setting to ensure your GSA secures both sustainable funding and sustainable groundwater management.

Moderator and panelist: Jena Acos

Jena Acos, JD, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA

Mack Carlson, JD, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA

Mark Hildebrand, Principal, Hildebrand Consulting, Oakland, CA

4:30

WRAP-UP, Continuing education sign-out and ADJOURN



ASSOCIATION OF GROUND WATER AGENCIES

AGWA, was formed in 1994 by a group of Southern California groundwater basin management agencies to provide a unified voice to coordinate efforts and exchange information to enhance the effective management of groundwater resources. AGWA's purpose is to create a forum for the discussion of groundwater issues for entities responsible for management of groundwater basin resources.

AGWA's primary objectives are to promote:

- ◆ More effective means of enhancing management of groundwater basins
- ◆ The reliability of existing groundwater supplies
- ◆ The increase of basin yields and the protection and enhancement of groundwater quality



AMERICAN GROUND WATER TRUST

The AGWT was formed in 1986 as a non-profit education organization with the mission of promoting interest and awareness in groundwater issues. The AGWT's conference and workshop programs and educational materials:

- ◆ Communicate the environmental and economic value of groundwater
- ◆ Showcase ground water science and technology solutions
- ◆ Increase citizen, community and decision-maker awareness
- ◆ Facilitate stakeholder participation in water resource decisions
- ◆ Promote efficient and effective groundwater management

2020

2020 AGWT-AGWA ANNUAL GROUNDWATER CONFERENCE, ONTARIO, CA

AGWA and AGWT work hard to keep this annual program an up-to date and topical information exchange opportunity. We do not issue any formal call for abstracts. All the presenters are invited. **HOWEVER.....** we are always pleased to have suggestions of topics, and ideas for presenters who we can consider for the program. Typically we start the program development process in August/September. Please contact Andrew Stone of the AGWT (astone@agwt.org) if you have recommendations for the 2020 program and/or if your company/organization is interested in being a 2020 sponsor.

AGWA AGWT 2019 Conference Presenter Professional Information

Anthony Zampiello, Chairman, Association of Ground Water Agencies and Executive Officer, Main San Gabriel Basin Watermaster and the Raymond Basin Management Board, Azusa, CA



Mr. Zampiello oversees groundwater quality and supply management activities as well as administration of the Basin's groundwater adjudication. He directs staff functions associated with basin management as it directly relates to groundwater production, well construction, groundwater treatment and resource planning. He has more than thirty years of water management and resource planning experience in the San Gabriel Valley with local Municipalities and Special Districts. He holds a Bachelor's Degree in Business Management and is a certified Water Treatment Operator and Water Distribution Operator. He is President of The Association of Ground Water Agencies (AGWA) and serves on the Greater Los Angeles IRWMP as Water Management Area Representative for Groundwater. He is also the Executive Secretary for the San Gabriel Valley Water Association and Central Basin

Water Association.

Andrew Stone, Executive Director, American Ground Water Trust, Concord, NH



Andrew Stone is a hydrogeology graduate from University College, London. He has experience in Africa and America as a university professor, groundwater consultant, & educator. Since 1989 he has worked in the United States as a private-sector consultant, as adjunct professor (teaching groundwater protection policy at Antioch New England University) and as groundwater educator, advocate and outreach specialist for the non-profit American Ground Water Trust.

His work with the AGWT has involved convening over 200 "information-exchange" conferences and workshops related to well design, groundwater management, aquifer storage recovery, water rights, conjunctive use, geothermal technology, water banking, and asset management. He has organized over 70 "Groundwater Institutes" that have trained 2,000 science teachers and educators on water resources issues and the basics of hydrology. He is a recipient of the National Ground Water Association "Oliver Award" in for his work

in promoting groundwater education

Matthew D. Hacker, Senior Resource Specialist, Metropolitan Water District, Los Angeles, CA



Matthew Hacker has more than 25 years of experience in water resources planning and local resource development, including recycled water, groundwater, and stormwater. Matthew has a Bachelors in Geology from the University of Notre Dame and a Masters in Geology from UCLA. He is currently a Senior Resource Specialist at the Metropolitan Water District of Southern California working on innovative project solutions, including Metropolitan's groundbreaking Regional Recycled Water Program.

Abhishek Singh, PhD, PE, Senior Water Resources Engineer, INTERA Inc., Torrance, CA



Abhishek Singh's professional experience has focused on research and application experience in the areas of groundwater and surface water modeling, planning and decision analysis, risk and uncertainty analyses, optimization techniques, and temporal/spatial statistics. He has expertise in the development, calibration, and application of hydrologic and data-driven models to support robust water-resources decision-making. He has served as Manager of INTERA's Quantitative Analysis Group and he leads projects and tasks involving the development and application of uncertainty analysis, risk assessment, and statistical modeling techniques. Abhishek has applied his expertise on a variety of water resource, environmental, and waste isolation projects where efforts have included modeling of complex hydrogeologic systems; analysis of time-series data to evaluate trends in non-stationary hydrologic systems, assessing the impacts of climate change on water planning; performance assessment modeling for radioactive and hazardous waste disposal facilities; and optimization of groundwater remediation and monitoring system design. Abhishek has a PhD in Civil and Environmental Engineering from the University of Illinois.

Bryan Bondy, PG, CHG, President & Principal Hydrogeologist, Bondy Groundwater Consulting, Inc., Ventura, CA



Mr. Bondy is a groundwater expert and groundwater management planning facilitator. He has a B.S. and M.S. in geological sciences with an emphasis in hydrogeology from San Diego State University and over 20 years of experience in the groundwater field. He is a Professional Geologist and California Certified Hydrogeologist. He has 20+ years of private and public-sector experience conducting a wide range of groundwater projects in California, including Sustainable Groundwater Management Act planning, groundwater basin studies, and groundwater modeling. Mr. Bondy is the former Groundwater Manager at Calleguas Municipal Water District. Bondy Groundwater Consulting, Inc. was founded in 2016 to service the growing need for groundwater professionals to address groundwater management, planning, and development needs in California.

Daniel J. Lafferty, PE, JD, Deputy Director, Water Resources, LA County Public Works, Environmental Programs Division, Los Angeles, CA



Dan began working for the Department in 1986. The Environmental Programs Division is responsible for providing waste management services for 1.1 million unincorporated area residents and 20,000 businesses; permitting, monitoring, and inspection services for hazardous substances underground storage tanks in the unincorporated County areas and 77 cities; industrial waste permitting and inspection services in the unincorporated County areas and 37 contract cities; stormwater inspection for commercial and industrial facilities in the unincorporated areas; integrated waste management planning for the unincorporated areas and the County as a whole; and implementing Countywide and unincorporated area waste reduction programs to achieve a waste free future.

In addition to his current assignment in the Environmental Programs Division, he has worked in the Water Resources, Watershed Management, Waterworks, and Sewer Maintenance Divisions and has served as the Department's Disaster Services Coordinator during his career. He earned a Bachelor of Science in Civil Engineering degree from Marquette University and a Juris Doctor degree from Loyola Law School. Dan is a registered Professional Engineer in the State of California and a member of the California Bar.

Rick Zimmer, Senior Account Manager, Eurofins Eaton Analytical, LLC, Monrovia, CA



Rick Zimmer is a Senior Account Manager at Eurofins Eaton Analytical, Inc., the largest potable water testing laboratory in the United States. Mr. Zimmer holds both Bachelor's and Master's degrees and has over 25 years of experience working in the water industry as a Project Manager, Account Manager, Customer Service Manager and Regulatory Specialist. Mr. Zimmer presently manages projects for Eurofins' customers in California, Hawaii, American Samoa, Guam, the CNMI and Japan. Mr. Zimmer also serves as Safe Drinking Water Committee Chairman-Elect for the California-Nevada Section of the AWWA, Regulatory Committee Chair for the Sacramento Area Waterworks Association and Water Quality Committee Member for the Association of California Water Agencies

Brian Partington, PG, CHG, Senior Hydrologist, Water Replenishment District, Lakewood, CA



Brian Partington is a hydrogeologist at the Water Replenishment District of Southern California. He is responsible for managing a basin-wide groundwater contamination program and for the past year has been a lead participant in groundwater sustainability discussions with key stakeholders in the Central Subbasin, Southern Los Angeles County, California. He recently co-authored an alternative analysis submitted for a high priority basin as required under the Sustainable Groundwater Management Act (SGMA). Brian has over 20 years of groundwater experience and received a Bachelor of Science degree in geology from California State University Fullerton. He is also a California Professional Geologist and Certified Hydrogeologist (PG/CHG).

Patrick Versluis, Director of Water Quality, Orange County Water District, Fountain Valley, CA



Pat Versluis began his career with OCWD in 2002. His responsibilities include oversight and implementation of many proactive, diverse, and comprehensive surface and groundwater monitoring programs focused on regulatory and non-regulatory activities that provide valuable information on ambient conditions of source waters and assessing groundwater protection.

Pat manages the groundwater compliance monitoring and reporting for over 200 drinking water wells used by the 19 cities and water districts in northern and central Orange County. He ensures permit compliance for the District's two water reclamation projects, the District's general dewatering permit, and stormwater NPDES permits. He regularly interacts with regulatory agencies, water districts/agencies and water quality experts on a wide range of water quality and policy issues regarding drinking water and proposed regulations. Pat earned a Bachelor's degree in Environmental Sciences from Oregon State University, a Master's degree in Environmental Studies from California State University, Fullerton, and Master's degree in Public Works Administration from California State University, Long Beach. He is certified in the State of California as a Qualified Industrial Stormwater Practitioner (QISP).

Randy Schoellerman, PE, Asst. Executive Director, San Gabriel Basin Water Quality Authority, West Covina, CA



Randy Schoellerman, Has over 20 years of experience in groundwater remediation issues and is the Assistant Executive Director/Senior Engineer for the San Gabriel Basin Water Quality Authority. The agency is responsible for the planning and coordinating groundwater remediation programs in the San Gabriel Basin. His experience includes project development and financing, resource planning, construction management, remedial design, state and federal regulatory compliance, analytical studies, source water investigations, and grant acquisition and administration. Mr. Schoellerman is a California Professional Civil Engineer and holds a B.S. in Civil Engineering and an M.S. in Environmental Engineering from California State University, Fullerton.

Anthony Brown, CEO & Principal Hydrologist, Aquilogic, Costa Mesa, CA



Anthony is the founder, Chief Executive Officer (CEO) and Principal Hydrologist at aquilogic. Prior to aquilogic, he was the Chief Business Development Officer at exp, Senior Vice-President of Strategy & Development at WorleyParsons, and the global sector leader for their Environment business. He was previously the CEO and one of the founding principals at Komex Environmental, a global environmental consulting company

Anthony received his MS degree in Engineering Hydrology from Imperial College London. He has over 25 years of experience in many aspects of infrastructure engineering and environmental consulting, with a focus on hydrologic science, water resources, environmental engineering, and water treatment & supply. He has provided expert testimony in numerous "high -profile" cases involving emerging and recalcitrant chemicals in groundwater. He has also briefed the following on the impact of industrial chemicals on water resources: United States Environmental Protection Agency (US EPA) and State regulators; White House Officials; US State, and local elected officials and Professional bodies and academic institutions.

Jeffrey V. Dunn, JD, Attorney, Partner, Best Best Krieger Law, Irvine, CA



Jeffrey V. Dunn is recognized as one of California's leading local government litigation attorneys. He has extensive experience in water resource litigation. In *City of Santa Maria v. Adams, et al*, Jeff successfully represented the City of Santa Maria in one of the largest and most complex cases in California involving the adjudication of water rights in Santa Barbara and San Luis Obispo counties. Jeff won a trial in Northern California representing the Truckee Meadows Water Authority, a Nevada joint-powers authority consisting of the cities of Reno and Sparks and Washoe County in their effort to obtain rights to Donner Lake water in 2010. In 2011 he successfully led a group of public water suppliers in establishing the safe yield of the Antelope Valley Groundwater Basin. Jeff is admitted to practice law in the State of California. He has a JD from Brigham Young University, J. Reuben Clark Law School.

Chuck Dunning, PhD, PG, Vice president Business Development, WellIntel, Milwaukee, WI



Chuck has a demonstrated history of working in the water resource and groundwater data fields. He is skilled in International Project Management, Geology, Hydrogeology, Groundwater Modeling, and Supervisory Management. He has a PhD in Civil and Environmental Engineering from University of Wisconsin-Madison. Prior to joining WellIntel he spent 21 years at the United States Geological Survey Wisconsin Water Science Center where he directed groundwater research priorities, strategic planning, community engagement and program development.

Aaron Collier, PG, Vice-President and Hydrogeologist, Collier Consulting, Stephenville, TX



Aaron Collier is a professionally licensed hydrogeologist with 14 years of experience in all facets of groundwater management, planning, sourcing, and subsurface investigations. As one of the vice presidents of Collier Consulting, Mr. Collier's primary responsibilities are overseeing the daily operations of the organization and being the primary point of contact for many of the firm's geoscience and engineering projects. Representative projects have included local and regional hydrogeological investigations throughout Texas and Florida, groundwater modeling, borehole and surface geophysical investigations, water resource engineering, and environmental litigation. Mr. Collier also is the managerial lead for Collier Consulting's water asset management software product HYDROS, a custom built cloud-based Software. Mr. Collier was educated at Tarleton State University (B.S. Geology) and the University of Texas at San Antonio (M.S. Geology).

Tim Parker, PG, CEG, CHG, President, Parker Groundwater, Sacramento, CA



California, Davis

Tim's practice focuses on strategic water resources planning and policy consulting, groundwater management planning and program implementation, and groundwater resources development. Tim's groundwater experience has included both contaminant hydrogeology and groundwater resources development and management in public and private sectors, and he was previously Schlumberger Water and Carbon Services, and prior to that with the California Department of Water Resources. As an active member of the California Groundwater Association he has served as a Director, Legislative Committee Chair, Liaison to the California Groundwater Coalition, California Water Plan Public Advisory and has served as President (2000 & 2001), Vice President, Secretary, Branch President, and co-authored the book "California Groundwater Management". He is a California Professional Geologist, Certified Engineering Geologist, and Certified Hydrogeologist. He has served as a Director of the National Ground Water Association-Association, Scientists and Engineers Division, as Chair and a Director of the American Ground Water Trust. He has a BS in Geology, from University of

Noah Heller, President, Best Environmental Subsurface Science and Technologies, (BESST) San Rafael, CA



Since 2000, Noah has focused on the development of various products and services for the environmental and groundwater resources industries. He has various patents, and numerous patents pending in the areas of subsurface samplers, pumps, multi-level groundwater monitoring systems, fiber optic sensors and deep well flow meters. Prior to establishing BESST, Noah's previous employment in geological sciences was with Amoco/Cyprus, Environmental Strategies Corporation, Jacobs Engineering, Environmental Strategies Corporation, Jacobs Engineering and SimulProbe Technologies Corp. He has a MS in geology from Mississippi State University.

Kent Madison, President, 3RValve LLC. Echo, OR



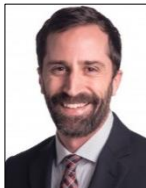
Kent is the third generation to operate the family owned farm employing several different farming techniques; including land applying BioSolids and reuse water as organic fertilizer. He holds patents on an ASR (Aquifer Storage and Recovery) down hole control valve and manufactures and sells under the 3RValve name. He is presently researching down-hole generation using this same technology. Kent received his Associate of Science degree in Production Agriculture from Blue Mt. Community College, and his Bachelor of Science in General Agriculture from Oregon State University. Currently his is Chairman of the Groundwater Task Force and of the Project Advisory Board for the USDA-NRI Pilot Irrigation Optimization Program.

David Kill, PE, Training Consultant, Xylem Goulds Water Technology, St. Paul, MN



Mr. Kill is a Registered Professional Engineer and has a BS in Agricultural Engineering from the Univ. of Minnesota. He joined Johnson Screens in 1969 and became Regional Manager in 1974. In 1979 he joined the Fluid Systems Division UOP in the reverse osmosis water treatment business in San Diego, CA as Director of Marketing. He rejoined Johnson Screens in 1981 as Environmental Products Manager. In 1988, he founded Recovery Equipment Supply, a supplier of products for ground water monitoring and remediation. In 1996, he joined Goulds Pumps ITT and was promoted to Regional Commercial Business Manager in and Regional Market Development Manager in 2004. He was the 2005 NGWA McElhiney Distinguished Lecturer and presented "Well Efficiency Is Not a Myth" to over 20 water well contractor conventions.

Gregory Schnaar, PhD, Principal Environmental Scientist, Daniel B. Stephens & Associates, Washington, DC



Dr. Schnaar's practice focuses on applying quantitative hydrologic methods to evaluate contaminant transport and conduct water resources assessments, including applying numerical and analytical models, forensic environmental evaluation, and statistical analysis. His recent projects have involved vapor intrusion evaluation, nonaqueous phase liquid (NAPL) modeling, age-dating of environmental releases, multi-party remedial-cost allocation, and basin-scale groundwater safe yield studies. Dr. Schnaar also manages environmental field programs, including collecting groundwater, surface water, vadose zone water, soil, and vapor samples. He has managed environmental and water resource investigations in California, Arizona, Maryland, Illinois, Ohio, Pennsylvania, and Washington. He has served as an expert technical consultant to the U.S. Environmental Protection Agency Office of Ground Water and Drinking Water on potential groundwater contamination associated with Carbon Capture and Storage projects, and he has authored U.S. EPA technical guidance documents and performed various trainings on potential groundwater and vadose zone contamination.

Stephen J. Baker, PG, HG, Hydrogeologist, Operation Unite, Living Water® programming, Nevada City, CA



Operation Unite® was founded by Stephen in 2010. The mission of Operation Unite® is to bring people together through a collaborative platform to solve water problems. Issues which Operation Unite® is currently active include the California Delta controversy and the permit exempt well water right issue impacting many western states in America. Interactivity is created through Living Water® programming (a weekly internet radio broadcast), mentor programming and outreach programs that facilitate solutions to community water issues or place a solution, created by Operation Unite®, into society. Stephen received the 2012 Special Recognition Award from the National Ground Water Association for media work supporting local and regional water issues across the country.

Dan Demoss, Executive Director, California Rural Water Association, Sacramento, CA



Dan DeMoss has served as the Executive Director for the California Rural Water Association (CRWA) for the last 13 years. Prior to serving as Executive Director, Dan held positions for CRWA in both the Technical Assistance Programs and the Operator Training Programs. Dan is a certified operator and has served as a Public Works Director, Utility Manager, and Treatment and Distribution systems operator. Dan currently heads up the Association's fee-for-services program and the CRWA operators and managers' training program. Dan was appointed last year to serve on the SWRCB Operator Certification Advisory Committee and also serves on the National Rural Water Association's Legislative and Apprenticeship Development Committee. Dan assisted the NRWA in developing the Wellhead Protection Program many years ago that eventually turned into the current Source Water Protection Program that has been working with rural communities throughout California for the last 12 years.

Chris Austin, Maven's Notebook, The Groundwater Exchange, California Water Library, Santa Clarita, CA



Chris is a leading voice in California water news, She is the founder and publisher of the independent and reader--supported Maven's Notebook website, California's most comprehensive source for water news and information. She is dedicated to providing unbiased information about California water issues, the water news source reaches thousands of regular readers and water leaders throughout the state. Chris is based in Southern California but travels throughout the state to cover conferences, meetings and events. She has earned a stellar reputation among the state's agricultural, environmental and water stakeholders for unbiased, complete, timely and accurate reporting and news curation. With a decade of experience writing and aggregating California water news for multiple websites, Chris Austin was recognized in 2016 by online news agency Environmental & Energy Publishing as one of nine Californians who play key roles in water policy. In 2015, her work was recognized with a scientific journalism award from the California-Nevada chapter of the American Fisheries Society, and a merit award from the California Water Policy Conference. In addition to writing original content and aggregating news for Maven's Notebook, Austin also contributes water--related content to

Capitol Weekly, Estuary News, KCET SoCal Connected, and Zócalo Public Square.

Gina Ayala, Principal Communications Specialist, Orange County Water District, Fountain Valley, CA



Gina Ayala, principal communications specialist, started with the Orange County Water District (OCWD) in January 2008. OCWD manages a vast groundwater basin that provides more than 75 percent of the potable water supply for 2.5 million people in north and central Orange County, California, and operates the world's largest water purification system for potable reuse, the Groundwater Replenishment System (GWRS). Gina manages communications and community outreach for the District and is responsible for media and outreach related to the GWRS.

Prior to joining OCWD, Gina worked at the Keck School of Medicine of the University of Southern California (USC). There she served as the assistant director of admissions and went on to serve as the associate director of student services. Before working at USC, Gina lived and worked in Queretaro, Mexico, teaching English and gaining fluency in Spanish. Gina began her career working for the Democratic National Committee where she was charged with donor relations and planning community and fundraising events. Gina has a Bachelor of Science in public administration and a Master of Arts in communication management from USC. She also earned a certificate in public relations from the University of California, Los Angeles. Gina is a member of the Public Relations Society of America (PRSA), Orange County Chapter.

Tim Barr, Deputy General Manager, Western Municipal Water District, Riverside, CA



Tim Barr is responsible for overseeing the District's strategic planning, policies, and budgets for a service area of nearly 1 million customers covering 527 square miles in western Riverside County. In addition, he directly oversees Western's water resources, engineering, and operations teams. Barr has more than 30 years of public-sector water experience and previously served as Western's director of water resources. Barr implemented a budget-based rate structure designed in compliance with the Water Conservation Act of 2009 and developed the District's water shortage contingency plan guiding the District through the statewide drought of 2014-2015.

His lengthy career includes roles as the director and deputy director of water resources, water-use efficiency manager, and communication specialist at Western as well as senior water resources planner at Rancho California Water District, a retail agency within Western's general service area. He Barr holds a bachelor's in Business Administration from the University of California, Riverside, and he is a certified Water Conservation Practitioner. He was also named Western's SMART Manager in 2013, an award which recognizes outstanding leadership at the District.

Adrian Hightower, PhD, Education Unit Manager, Metropolitan Water District, Los Angeles, CA



Adrian is an experienced manager, educator and consultant with expertise with renewable energy and water treatment technologies that address the Water-Energy Nexus. He has managed numerous technical teams in academic and industrial settings and conducted international research and facilitated entrepreneurial activities addressing Sustainability, Renewable Energy and the Water-Energy Nexus. Adrian manages Metropolitan's Education Unit comprised of professionals, paraprofessionals and administrative support. Major responsibilities include, oversight of all water related education outreach programs, events and curriculum. These programs serve students and teachers in pre-K, TK, K-12, college, vocational, university and adult education endeavors throughout Southern California. This includes oversight of Metropolitan's Diamond Valley Lake (DVL) Education Program and supervision of the DVL Docent Program. Adrian works closely with Metropolitan's member agencies to conduct water related education programming. He received BS, MS, and PhD degrees from the California Institute of Technology.

John Jansen, PhD, PG, PGp, Senior Geophysicist/Hydrogeologist, Collier Consulting, West Bend, WI



John has a B.S. in Geology and a M.S. and Ph.D. in Geological Sciences with an emphasis in hydrogeology and geophysics, all from the University of Wisconsin-Milwaukee. He is a Senior Geophysicist and Hydrogeologist for Collier Consulting. John works on a wide variety of ground water projects around the country specializing in high capacity wells and groundwater resource management. He received the NGWA Keith A Anderson Award in 2012 for service to NGWA and the groundwater industry and was the NGWA McElhiney Distinguished Lecturer in Water Well Technology in 2013. John was an invited lecturer on managed aquifer recharge and groundwater geophysics for the Geoscience University of China in Beijing in June of 2018.

Theodore Asch, PhD, PGp, Research Geophysicist, Aqua Geo Frameworks, LLC, Lakewood, CO



Dr. Ted Asch is a Research Geophysicist with Aqua Geo Frameworks in Lakewood, Colorado. His work includes groundwater exploration and hydrogeologic characterization. Dr. Asch was previously a Research Geophysicist with XRI Geophysics and before that with the U.S. Geological Survey Crustal Geophysics and Geochemistry Science Center for 10 years. Prior to the USGS he was a Geophysicist for 4 years with the U.S. Army Corps of Engineers, Sacramento District concentrating on the development of protocols and the practice of the application of exploration geophysics to unexploded ordnance (UXO) investigations. Before entering public service he was a private exploration geophysics contractor performing surveys and developing analysis algorithms. Dr. Asch has conducted electrical, electromagnetic, magnetotelluric, and marine geophysical surveys all over the world. Ted has a PhD in Exploration Geophysics from UC Berkley.

Max Halkjaer, Hydrogeologist, Geophysicist, Ramboll Group, København S Denmark



Max Halkjær has more than 20 years of professional experience in the water sector. His field of work includes overall strategic management planning, project management, quality assurance, strategic planning etc. Max has expert knowledge of geophysics and groundwater modelling and protection. Prior to joining Ramboll, Max worked for Watertech (4 years) and SkyTEM Surveys (12 years). He has a MSc in Geophysics from Aarhus University and an MBA from Aarhus School of Business.

Jena Acos, JD, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA



Jena works with both public and private sector clients in the water industry. Her water district clients include one with the largest managed ground water resources in California's Central Coast. She helps clients comply with the Sustainable Groundwater Management Act, landmark Act while also drafting and implementing sustainable groundwater management plans. For her public agency clients, Jena draws on her experience as a research assistant for the Harrison Institute for Public Law in Washington, D.C. She reviews contracts, ordinances and code enforcements and attends public meetings for municipalities. Prior to joining BHFS, Jena worked as a law clerk for Earthjustice in Oakland, California. She also spent a year as a clinical student focusing on coastal climate change and land use issues at the state and local level and was a law clerk for Coronel & Perez Abogados in Guayaquil, Ecuador. Jenner has a BA from UC Berkeley and JD from Georgetown University Law Center. Washington DC.

Mack Carlson, JD, Attorney, Brownstein Hyatt Farber Schreck, Santa Barbara, CA



Mack has a background in environmental geology and a member of the firm's Natural Resources Department. At BHFS, Mack works with various partners across the natural resources practice area on a variety of topics, including water law, land use, environmental law and public law. Before attending law school, Mack was a hydrogeologist in California and Utah, where he worked for an international mining company and an investor-owned water utility. While in law school, he was a judicial extern for U.S. District Court Judge Miranda Du in Nevada and a legal extern with the Office of the California Attorney General's Office in the Land, Environment and Natural Resources Section. He also was a panel co-chair of the California Water Law Symposium, served as president of the Water Association of Law & Policy and participated in the inaugural class of the Aoki Water Justice Clinic. He has a BS from Tufts University and a JD from UC Davis School of Law.

Mark Hildebrand, Principal, Hildebrand Consulting, Oakland, CA



Mark Hildebrand is a financial and management consultant with 18 years of experience in helping local governments, federal agencies, special district, private companies, and NGOs bridge funding gaps and find strategic solutions to their business needs. Mark's specialization is in utility rate-setting, while his rounded background makes him equally effective in the disciplines of strategic planning, business analysis, organizational effectiveness, and change management. He has performed scores of water, wastewater, and recycled water rate studies and he has represented his clients in the delivery of hundreds of millions of capital projects, including privatization contracts. A recognized thought-leader within the municipal utility sector, he has published articles and presented at conferences on topics including the legal framework of utility pricing in California, alternative project delivery models, conservation planning and utility business strategies. Mark has a Bachelors degree from UC Berkeley and the University of Bordeaux (France), a Masters degree from the Bren School at UC Santa Barbara

