

THE ARIZONA HYDROLOGICAL SOCIETY

NEWSLETTER



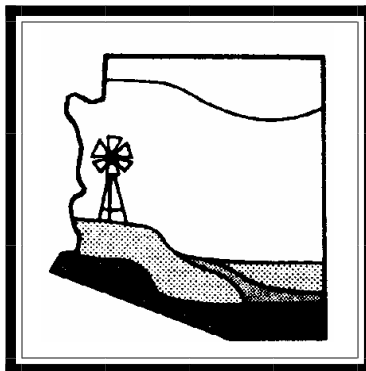
WATER WARS CALIFORNIA'S "LIQUID GOLD" SHOULDN'T BE ENTRUSTED TO PRIVATE CONGLOMERATES

-by Joseph Cotchett
Cotchett, Pitre, Simon & McCarthy

The following is an article that appeared in the July 11, 2004, online issue of the San Francisco Chronicle. It is reprinted with permission. For more information about Mr. Cotchett, see the end of the article. LKB

You are driving down the California coast to Monterey, looking out over the blue Pacific, and your view is interrupted by tugboats pulling what appear to be huge plastic bags the size of football fields going south. The bags are filled with water from Northern California rivers that has been sold to thirsty Southern California and Arizona residents.

Does this sound far-fetched? No, and if it weren't for the objections of two different North Coast communities, plans for exactly such a scheme – known as "water bagging" – would be in place and the tugs would be passing the Golden Gate on a regular basis, raising the question of who owns the river water. Proposals for water bagging populate only one of many fronts in a war that threatens to explode in the next decade. The war is over who owns the water, and it will determine who owns what is arguably California's and the Earth's most important resource.



Fortune Magazine calls water the oil of the 21st century: "the precious commodity that determines the wealth of nations." The Central Intelligence Agency says that by 2015, access to drinking water could be a major source of international conflict around the world.

All signs point to a growing water crisis that will only worsen in the coming decades. World population, now at 6 billion, is estimated to hit 9 billion by 2050. California will jump from

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UPDATE ON 2004 ANNUAL AHS SYMPOSIUM SPONSORS/ EXHIBITORS

-by Mike Block
Symposium Fundraising Chair,
Metro Water District

In addition to the sponsors who we thanked in the July newsletter, we are pleased to announce that companies continue to renew or become sponsors/ exhibitors to this year's annual symposium! Presently, the Symposium Planning Committee has raised about 75 percent of its cash sponsorship goal of \$30,000.

The Symposium Committee appreciates the renewal by Raytheon of their Society sponsorship. Raytheon is again sponsoring the audio visual needs for the symposium. This in-kind service will save the Society

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**WATER WARS CONTINUED
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today's 34 million to at least 50 million at the same time. The United Nations estimates that at our current usage rates, almost 3 billion people will face severe water shortages by 2025.

Around the world, water supplies are being siphoned up. Several major rivers, including the Colorado, which supplies much of California's water, the Yangtze, and the Nile barely reach their respective seas, if at all. Last year, then-U.S. Environmental Protection Agency chief Christie Whitman warned that water quality would be "the biggest environmental issue we face in the 21st century."

Of the world's water supply, only 1 percent is usable for domestic purposes, (i.e., household and agriculture). The rest is either salt water or locked up in ice caps. Ironically, the global warming trend will make things worse. Whether you blame humans or not, there is no doubt the planet is getting warmer, according to the U.S. National Oceanic and Atmospheric Administration. As our atmosphere warms, ice and snow packs, crucial for the steady release of water into rivers and lakes, will shrink. More rain will wash directly into the sea and become salt water.

When some people see the words "water shortage," they think of a humanitarian crisis. Other people think "supply and demand" and want to figure out how to make a profit on the shortage. In the United States, 85 percent of water utilities are still public-owned, but that figure could change rapidly as multinational corporations such as

France's Vivendi Universal and Germany's RWE swallow up smaller, locally run utilities around the world.

But should basic economic principles such as the law of supply and demand apply to water? Is water a basic right to which everyone, rich or poor, deserves access?

In South Africa, the post-apartheid constitution explicitly says so, clarifying a right that's already been put to the test by people whose supply was cut off when they could not afford to pay their water bills.

Here in California, we have come to expect clean, healthy water to be there when we turn our faucets. But water that falls from the sky or flows through rivers is not necessarily the same as clean, drinkable water. Pure water is usually a man-made product, not a gift from nature. The question is, how will we obtain clean drinking water for millions of people in California and the billions in the world?

At the heart of this question is the dispute of whether private, for-profit ownership of public water utilities is better than public ownership. Before we look at the arguments, first some facts.

Fact: Maintaining and upgrading water systems is expensive. The EPA estimates that \$150 billion will be needed over the next 20 years to upgrade our nation's drinking water infrastructure and that in California, we will need \$15 to \$20 billion. State water experts think it will be much more, in the \$30 to \$40 billion range. Put that on top of our deficits, and it is a large slice of future state budgets.

Fact: With the current fiscal crisis and projected government deficits here in California for years to come, public funds for infrastructures such as water maintenance will be hard to come by and measured directly against other public funding needs. Proponents of privatization say the best source of funds is private capital, enticed by the prospect of profits. Not surprisingly, the Republican-led Congress is encouraging privatization by threatening to withhold federal funding from municipal water projects that don't at least consider privatization as an option.

Fact: Fifteen percent of the nation's water supply is in private hands, and the problems of private ownership of a public resource are mounting.

In 1998, the city of Atlanta signed a 20-year contract to outsource its water delivery and treatment system to United Water, now a subsidiary of the French conglomerate Suez Lyonnaise des Eaux. To win the contract, the company promised to reap savings for the city that never materialized. Complaints about the service – suspiciously similar to complaints about public services that also enjoy monopoly control – piled up. The city had to issue at least four "boil water" advisories to warn citizens against contaminants. Finally, the city of Atlanta negotiated a return of the system to public hands following the disastrous experiment with privatization.

Fact: Our water systems are in dire need of repair and upgrading, as our population swells. San Francisco's Hetch Hetchy system, which draws water from a reservoir within Yosemite Na-


**WATER WARS CONTINUED
FROM PAGE 2**

tional Park, will get a \$1.6 billion upgrade over the next decade or so, financed with public money approved by San Francisco voters, even though they knew their water bills would triple by 2015. But there's a catch: The state is overseeing the enormous project because San Francisco has a bad habit of frittering away bond money. If a state audit shows similar practices on this project, one scenario brought up by Sacramento lawmakers has the state seizing control of Hetch Hetchy.

The arguments against privatization are documented, yet people continue to push privatization in the name of profit. Under private control, water companies are subject to constant shareholder pressure for profits, not public service. A study by U.S. News and World Report showed that most customers of private water companies pay higher rates – sometimes twice as high as the national average.

These comparisons are starting to register with elected public officials, and despite the difficult economic climate for local governments, several municipalities are working to reclaim their water utilities from private hands. In the Bay Area, the small San Mateo County coastal towns of Montara and Moss Beach had to look into eminent domain seizures of their water supply, owned by American Water Works, a subsidiary of German utility giant RWE. Impetus for the civic seizure came from Montara's water rates, which are triple what people in neighboring Half Moon Bay and Pacifica pay.

American Water Works wanted to raise rates further to satisfy its shareholders and German parent corporation – but through a court-supervised settlement, the Montara Sanitary District was able to purchase the system, although at a very steep price. The dilapidated water

delivery system serving about 1,650 connections went for a whopping \$11.1 million. Similar grumblings about private ownership are being heard in other Northern California communities, including Monterey.

AHS 2004 SYMPOSIUM FIELDTRIP REMINDER!

Don't forget to sign up early for your choice of one of the three field trips. Remember it's a first-come first-serve and spaces are limited and filling up.

KARTCHNER CAVERNS - CAVE HYDROLOGY

Kartchner Caverns by research scientists Rick Toomey Sr., Arizona Parks; Dr. Bob Casavant, University of Arizona; and Charles Graf, Az Dept. of Environmental Quality. Hydrogeology, Surface Geology, and other cool Stuff.

Date/Time: Saturday, September 18, 2004, 8:00 AM – 8:00 PM
Cost: \$80 per person

Provided: handouts, lunch, snacks, transportation
Number of Participants: Minimum 20 – Maximum 40

Raffle during Symposium for four slots on this trip \$10 per ticket
(proceeds go to scholarship fund).

THE HYDROLOGY, RANGELAND ECOLOGY, AND WINE OF UPPER CIENEGA BASIN

Hydrogeology – Rangeland Ecology – Callaghan Winery
(renowned winery, wines served at Whitehouse Dinners)

Date/Time: Saturday, September 18, 2004, 8:00 AM – 4:00 PM
Cost: \$50 per person

Provided: handouts, lunch, snacks, transportation
Number of Participants: Minimum 20 – Maximum 40

FIRE HYDROLOGY AND SKY ISLAND ECOSYSTEM^{Ef-} OF THE SANTA CATALINAS

ffects of the past two years' fires on the hydrologic system. U.S. Forest Service and U of A Hydrology Dept. researchers. Learn about flood dynamics in response to changes in soils and fire mitigation measures.

Date/Time: Saturday, September 18, 2004, 8:00 AM – 4:00 PM
Cost: \$15 per person

Provided: handouts, lunch, snacks, transportation
Number of Participants: Minimum 20 – Maximum 40

CHAPTER NEWS



FLAGSTAFF

-by Nancy Riccio
Plateau TechComm

SUMMER MEETING SCHEDULE

The Flagstaff Chapter is now on summer break. Talks and meetings will resume again in the fall.



PHOENIX

-by Lee-Anna Walker
Archaeological Consulting Services, Ltd

JULY MEETING SUMMARY

Dr. Roland Wass, P.E., with Wass-Gerke and Associates, Inc. discussed several river and wetland restoration projects located throughout the Phoenix area. In the past, extensive stands of mesquite bosque and grassland vegetation existed along the Gila and Salt Rivers and their tributaries. Lush Velvet Mesquite vegetation was documented in 1939, but it was later destroyed due to its economic value as food, fuel, and timber. The preexisting grassland vegetation has no current analog but was said to support several hundred to a thousand head of cattle. In addition, there were areas in Arizona that supported a thick riparian forest and wetland marshes, but it is not known how these rich habitats were destroyed: Of the 3% to 5% of area in Arizona that once supported aquatic habitat, over 90% is now destroyed. Factors leading to the drastic reduction of the riparian ecosystem include extensive beaver trapping, mining/deforestation, and livestock overgrazing.

Today's factors include continued riparian habitat reduction, altered hydrologic conditions, water quality degradation, land-fill impacts, and the introduction of exotic species, to name a few. Various entities throughout the Phoenix area are spending millions of dollars to reinstate riparian and aquatic habitats by modifying hydrological and vegetation conditions. While there is a push to develop these habitats, issues concerning gravel and sand mining operations and how to sustain the habitat are a couple of key issues that have yet to be resolved. In some projects, drastic changes to the hydrologic conditions were required to develop a new habitat. For example, in the Rio Salado Habitat Restoration Project a leaky, perched aquifer was engineered to raise the water table high enough to support cottonwood and willow trees. While it is not always economically or technically feasible to develop artificial perched conditions, measures such as incorporating appropriate vegetation communities that can be supported by current groundwater conditions would require less water and expense to maintain. Several benefits of wetland and riparian restoration projects are to provide recharge conduits utilizing water treatment plant effluent, recreational areas, and development of riparian ecosystems.

The Phoenix Chapter thanks Dr. Wass for his presentation.



AUGUST & SEPTEMBER MEETINGS

Because chapters are preparing for the 2004 Annual AHS Symposium in September, there will not be monthly dinner meetings this month or next. We plan on seeing you in Tucson instead! Regular monthly meetings will resume on October 12 at Macayo's when our next speaker will be Joost deJong. Watch the newsletter for details.

2005 PHOENIX CHAPTER BOARD NOMINATIONS

Believe it or not, it's time to start thinking about 2005 Phoenix Chapter and Corporate Board nominations! If you are interested in becoming an officer or wish to nominate someone in the Phoenix Chapter, please contact Katy Brantingham, KBrantingham@arcadis-us.com.



TUCSON

-by Phil Bredfeldt
Clear Creek Associates

JULY MEETING SUMMARY

Kristine Uhlman, the Senior Program Coordinator of the Arizona branch of NEMO, or Nonpoint Education for Municipal Officials, spoke to the Tucson Chapter on July 13 at Errol L. Montgomery & Associates. Kristine's presentation was entitled "Finding NEMO in Arizona."

The National NEMO Network is a collection of programs that educate municipal officials and other local land use decision makers about the links between

CHAPTER NEWS



TUCSON NEWS CONTINUED FROM PAGE 4

land usage and the protection of natural resources. It is comprised of multi-agency coalitions that draw upon the expertise and resources of local partner organizations and agencies to provide nonpoint source education within their states. The original NEMO program was developed at the University of Connecticut, but additional related programs have been developed nationwide. The institutional homes of NEMO programs are the USDA Land Grant system, the NOAA Sea Grant system, and numerous state agencies and nonprofit groups. Currently, NEMO projects exist in 32 states and territories.

Arizona is the first western state to implement a NEMO program, and represents the first attempt to adopt the national NEMO approach to conditions in the semiarid western United States. The program within Arizona is funded by the Arizona Department of Environmental Quality, with support from the University of Arizona. The focus of the NEMO program within Arizona is local water quality and quantity issues, with a particular focus on public awareness and stormwater runoff reduction. The local NEMO program specializes in GIS tools for watershed assessment, and helps publish Best Management Practices (BMPs) in local watersheds. The Arizona NEMO program also aids in finding funding sources for the implementation of BMPs.

NEMO projects within Arizona include efforts to characterize groundwater and surface water conditions in local watersheds. One of these projects involved the isotope characterization of groundwater near Benson. Using tritium and carbon-14 dating techniques, the groundwater within the basin was determined to be approximately 11,600 years old. The likely dominant recharge sources are the San Pedro River and the Whetstone and Rincon mountain ranges.

Additional priority watersheds within Arizona are the Bill Williams, the Upper Gila, and the Verde. Nonpoint pollutant constituents in these watersheds include suspended sediment, arsenic, copper, selenium, mercury, zinc, and others. The land use activities associated with these pollutants are generally farming, ranching, or mining related. GIS modeling had been performed on these three watersheds to analyze and predict runoff changes over time. Some of the variables considered during the analysis included land usage, soil conditions, precipitation, and population densities.

Some of the future efforts of the Arizona branch of NEMO will likely include furthering partnerships with watershed groups, distributing BMPs, continuing the modeling of priority watersheds, and supporting educational outreach programs.

The Tucson Chapter would like to thank Kristine Uhlman for her presentation and the continuing educational efforts of NEMO in Arizona.

SEEKING SPONSORS FOR OCTOBER DINNER MEETING

We are currently looking for sponsors for our Annual Dinner Meeting this year, which will feature renowned groundwater hydrologist and the National Ground Water Association's Darcy Lecturer, Dr. Allen Shapiro. Dr. Shapiro is a research hydrologist at the USGS in Reston, Virginia, specializing in fracture flow and chemical transport in fractured rock. The meeting will be held at the Viscount Suites Hotel on Tuesday evening, October 5. Sponsors at the \$400 level will receive two free dinners with preferred seating at the speaker's table, acknowledgment in the September AHS newsletter, on the website, and a poster advertisement in the meeting room along with a small table for your firm to display company information. At the \$200 level, sponsors will receive one free dinner with preferred seating at the speaker's table, website acknowledgment, September newsletter acknowledgment, and poster advertisement in the meeting room. Benefits at the \$100 level include website acknowledgment in addition to newsletter and poster advertisement.

Please contact Chapter Vice President Anne Huth (akramer@hwr.arizona.edu) or Chapter President Bill Petrouson (bill.petrouson@amec.com) if you are interested in sponsoring this event. ☐

A fanatic is one who can't change his mind and won't change the subject.

Sir Winston Churchill



USGS TO STOP PHOTOGRAPHIC PRODUCTION

The following is an announcement from the USGS and was forwarded to me by AHS member Errol Montgomery. LKB

This communication provides notification that the USGS EROS Data Center (EDC) plans to transition from providing traditional photographic products from its historical film archive to providing only digital products from which paper prints can be generated by computer-linked printers or plotters.

The US Geological Survey archives thousands of rolls of film containing over eight million frames of historical aerial photographs gathered from various Federal agencies and dating back to the 1930's. The largest portion of this archive consists of original film taken during the 1940s through the 1970s to produce 1:24,000-scale USGS topographic quadrangle maps.

Since the early 1970s, the USGS has offered a variety of photographic products from that archive, ranging from 9" to 40" prints along with 9" film copies. For the last few years there has been a decline in customer demand for paper prints and film products. Also, several major suppliers of traditional photo-processing chemicals, paper, etc. are converting to digital product lines and discontinuing traditional raw materials. Therefore, with production expenses becoming increasingly higher than can be recovered through product sales, and with a fundamental transition in the photographic materials industry, the USGS will discontinue offering photographic products.

Please note that no orders for photographic products will be accepted after **September 3rd, 2004**; however, all photographic orders received prior to that cut-off date will be filled.

The USGS/EDC will, however, begin offering two new digital products. One of the new digital products is a high-resolution, digitally scanned product, which will be made available upon request starting in July 2004. This digital product is created at approximately 1200 dpi with an output file size of approximately 120 megabytes from a black and white photograph and 360 megabytes from a color photograph and provided in a TIFF format. The cost for this product will be \$24 for cleaning and scanning each frame plus the standard media generation costs of, \$45/CD, \$60/DVD or \$30/file if ftp'd.

A second digital product is a medium-resolution digitized product and will be available online as the rolls of film are digitized beginning in October 2004. This medium-resolution digital product is created at approximately 600 dpi with an output file size of approximately 15 megabytes from a black and white photograph and 45 megabytes from a color photograph and will also be provided in a TIFF format. The cost for this product will be \$1 per file access fee along with the media generation costs of \$30/file if ftp'd, \$45/CD, or \$60/DVD. Samples of both the high-resolution and medium-resolution digital products for two frames of photography over an area of New York City acquired in 1966 at a scale of 1:24,000 are available to FTP from the following location:

http://edc.usgs.gov/phoenix_iv/new_york.

Unless otherwise restricted, all digital products are public domain and can be modified to suit your needs or combined with other digital data. For further information please contact: custserv@usgs.gov.



SPONSORSHIP CONTINUED FROM PAGE 1

nearly \$5,000 in equipment rental.

A special thanks to the U.S. Geological Survey who has renewed their Society sponsorship.

We also appreciate Clear Creek Associates, GeoSystems Analysis, and URS for renewing as Corporate sponsors this year.

Confirmed exhibitors besides our Society and Corporate sponsors include Aerotech Laboratories, Archaeological Consulting Services, Boart Longyear, Del Mar Analytical, Drilling Equipment Supply, Inc., Engineering and Environmental Consultants, Intermountain Environmental, Tam International, Verdad Group, and WDC Exploration and Wells.

The committee is pleased to report that Haley & Aldrich will be a Field Trip sponsor and has chosen to support the Sonoita Hydrology and Wine Country Tour.

Our Break sponsors include Arcadis, Golder Associates, HydroSystems, and WDC Exploration and Wells. Thanks to LFR Levine Fricke who has chosen to sponsor the Friday Awards Program and Lunch.


**SYMPOSIUM SPONSORS
CONTINUED FROM PAGE 6**

To view a complete list of donors and sponsors, please visit our website.

If your firm would like to also be a Sponsor of the Wednesday Night Icebreaker, Thursday or Friday Lunch, Thursday Night Dinner, Field Trip, or Break, please go to the Symposium AHS website at http://www.azhydrosoc.org/Symposium_Sponsorship.html or contact me at (520) 575-8100 or mblock@metrowater.com.


**WATER WARS CONTINUED
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Internationally, the rallying cry for such citizen revolts is "Cochabamba," the name of the Bolivian town where deadly riots forced the government to cancel a 40-year contract with a subsidiary of San Francisco giant Bechtel Corp. Soon after signing the contract, the water company jacked up rates enormously, to levels that represented a significant percentage of people's monthly wages. The locals revolted.

Such contracts, in which governments cede control to private corporations, are often the result of pressure from international financial institutions. International loans to cash-strapped countries come with conditions: Privatize state assets or no loan. With the ratification of regional and global trade pacts, asset seizures like the canceled contract in Cochabamba can end up in court. Bechtel and its partners are now suing Bolivia for multimillions of dollars in lost future profits – the sum the company estimated it would have made had it kept the contract for

a few years. It's somewhat as if Enron had sued the state of California.

In our own backyard, the lush coastal rivers of Northern California, Ric Davidge, an Alaskan businessman and former Reagan-era Department of Interior official, has twice tried unsuccessfully to bag water from our rivers and tug it to Southern California.

In recent years, Mendocino County citizen groups denied his play for water from the Albiion and Gualala rivers. He then changed his company name and went one county north. He proposed bagging Mad River water that was diverted through pipelines to pulp mills near Eureka, but which the mills don't need a lot of. The local water district shelved the proposal indefinitely for further investigation, apparently because Davidge's Aqueous Corp., has foreign backing, which could trigger international jurisdiction of a potential legal dispute involving the Mad River in Humboldt County.

Even without international complications, ceding local control of local water is dangerous. A Eureka Times-Standard editorial noted that the Trinity River has been, and will be, tapped by the rest of California for homes and cities for years to come. When the river's fishery declined, a plan to restore higher flows was put in place and a lawsuit resulted, spawning problems for all North Coast rivers.

To Californians, who owns the water is nothing new. Just ask the people of the Owens Valley, or the once-plentiful Los Angeles orange growers. Or rent the classic film "Chinatown," which

depicts the chicanery of Los Angeles civic leaders nearly a century ago to divert water to L.A. and create a megalopolis. Water wars have always been waged behind the scenes, played out in boardrooms, legislatures and council meetings. Citizens typically become aware of the struggles when the water bills shoot through the roof, when the water service taken for granted is contaminated or interrupted, or when environmental damage becomes too dire to ignore.

We need to understand who owns the water, who is profiting from it, and whether that ownership is good for the people who rely on the water supply every day.

If you liked the energy crisis of a few years ago, you will love the coming water crisis in California.

Joseph W. Cotchett is a San Mateo County trial lawyer. He has served as chairman of the California State Parks Commission. He is the author of "The Coast Time Forgot," a piece on the history of the San Mateo County coastline.


**GLOSSARY OF
DRILLER'S TERMS
FEATURED AT 2004
SYMPOSIUM**

-by Mike Block
Metro Water District


Need a handy reference to understand what your driller is saying to you? Baroid Industrial Drilling Products, Clear Creek Associates and the Arizona Water Well Association through the National Ground Water Association Press have published a 69 page compendium of useful drilling terms. This publication will not only aid you, but also the Arizona Hydrological Society. The author's royalties from the

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DICTIONARY CONTINUED FROM PAGE 7

book sales will be donated to AHS, and the Arizona Water Well Association.


Copies will be available for purchase at the Symposium at Clear Creek Associates' exhibit. Cost for NGWA members is \$25 and \$31.25 for non-NGWA members. Please check out the book while at the Symposium and meet the authors, Marvin Glotfelty and Sheryl Gordon of Clear Creek Associates, and Ron Peterson of Baroid. They might even autograph your copy! 



GREEN OPTIONS

Here are a couple of "green options" that AHS members may want to take advantage of. According to *USA Today*, starting July 18 and continuing through September 6, "consumers can take old computers and other electronics to Office Depot stores for free recycling this summer." Items accepted will include computers, monitors and most other peripherals, digital cameras, copiers, fax machines, cell phones, personal digital assistants, and TVs 27 inches or smaller. Customers can recycle one product per day. A PC and its peripherals count as a single item. It would probably be a good idea to call and check with your local Office Depot for details.

Next, for coffee drinkers with green thumbs, Starbucks Corp. has begun to turn commercial waste—spent coffee grounds—into a PR asset. Five pound bags are available for free and make an excellent addition to

your compost pile. Check with your local Starbucks (just pick any corner) to see if they participate in the program. 



EMPLOYMENT OPPORTUNITIES

2 positions open at SRK

Senior Civil/Geotechnical Engineer, Tucson, SRK Consulting

SRK Consulting is an international firm of specialist consultants who focus mainly on the mining industry. We employ over 500 professionals in 25 offices on six continents. More information on our company is available at our website (www.srk.us).

In addition to a competitive salary, we provide a performance bonus, extended medical and dental care, and shareholding opportunities in the company.

We are seeking a senior civil/geotechnical engineer for a position in our Tucson office. The successful candidate will have:

An undergraduate degree in civil engineering. At least 10 years of civil or geotechnical engineering experience, preferably including mining industry experience. Registration as a PE in Arizona (or at a minimum eligibility for such registration) Demonstrated leadership and managerial experience. Preference will be given to Arizona residents. Individuals who do not have legal residence status in the USA will not be considered.

The successful candidate will

manage and undertake engineering studies related primarily to the mining industry, including civil/geotechnical aspects of project design, construction, operation and closure.

In addition, the successful candidate will be expected to establish and maintain client relationships, and work in a team environment. This position requires strong networking and communications skills, and sound interpersonal capabilities are therefore essential.

Applicants should respond by sending their resume to Christine England preferably by email to cenland@srk.com, or fax it to (604) 687-5532 or mail it to Suite 800, 1066 West Hastings Street, Vancouver, BC, Canada, V6E 3X2.

Those candidates under consideration will be contacted. No phone calls please.

Senior CAD Draftsperson, Tucson, SRK Consulting

We are also seeking a senior CAD draftsman for a position in our Tucson office. The successful candidate will have at least 5 years of AutoCAD experience including civil, survey, image, and 3D elements using AutoCAD Land Development Desktop (version 2000 and above).

Tasks will include the preparation of construction drawings and maps, as well as graphics for company reports. Projects mainly involve surface facilities for mines including tailings impoundments, leach pads, waste

**EMPLOYMENT CONTINUED
FROM PAGE 8**

dumps and surface infrastructure.

Applicants should preferably also have experience with Adobe Photoshop, Adobe Acrobat, and Microsoft Office Suite.

Applicants should respond by sending their resume to Cori Hoag preferably by email to choag@srk.com, or fax it to (520) 544-9853. Those candidates under consideration will be contacted. No phone calls please.

Staff Geologist

Hydro Geo Chem, Inc. is currently seeking an entry-level staff geologist to join our Scottsdale staff. The candidate should possess, at a minimum, a Bachelor's degree in geology. Responsibilities will include soil, well and soil gas sampling; maintenance of remediation systems, and collection of data for report preparation. Mechanical aptitude and knowledge of equipment is an asset. Basic knowledge of geologic classification of soils and groundwater flow is essential. Compensation is competitive, dependent upon skills and experience, and includes medical and dental insurance and an optional 401k plan. The successful candidate will work in a team environment for an established 25-year firm nationally recognized as a provider of quality and innovative ser-

Always acknowledge a fault. This will throw those in authority off their guard and give you an opportunity to commit more. Mark Twain

**ANNOUNCEMENTS**

Cynthia Bain, Director of Technical and Regulatory Compliance/Quality Assurance at Legend Technical Services was awarded the **Arizona Water and Pollution Control Association (AWPCA) Laboratory Analyst of the Year Award**.

Cindy also serves as President of the Arizona Laboratory Association (ALA), represents ALA on the Water Systems Coordinating Council (WSCC) and is a voting member of the Arizona Environmental Laboratory Advisory Committee (ELAC). Cynthia Bain may be contacted at cbain@legend-group.com or at her direct line, (602) 324-6103.



JE Fuller/ Hydrology & Geomorphology has moved its Tempe office to 8400 S. Kyrene Rd., Suite 201, Tempe, AZ 85284. The company's specialized engineering services include Arid Land Hydrology, Applied Fluvial Geomorphology, Floodplain Delineation, Erosion Hazard Analyses, Sediment Transport & Scour, Drainage Master Plans, Impact Fee Analyses, Drainage Cost Assessment, and Navigability Studies. JE Fuller employs 13 professionals in their Tempe and Tucson offices.

Contact Information:
JE Fuller Hydrology & Geomorphology, Inc.
8400 S. Kyrene Rd., Suite 201
Tempe, AZ 85284
Phone: (480) 752-2124
Fax: (480) 839-2193
<http://www.jefuller.com/>

**PEOPLE ON THE MOVE**

Longtime AHS member and past Symposium Co-Chair, **Julie Rutkowski**, will be leaving the dusty deserts and heading for the cool country of Durango, Colorado. Julie will be serving as the new Environmental Compliance Manager for the Southern Ute Indian Tribe.

Over the years, Julie has been a very active member of the Phoenix Chapter, serving in various capacities, including Chapter Secretary. Her energy and dedication has been appreciated by all those who have worked with her, and she will be missed.

Julie's message to the Arizona hydro community is: "I have so thoroughly enjoyed my time here in Arizona, working with all of you, and working at ADEQ in particular. If you are ever up in the 4-corners region, please give me a call or drop me a line - hopefully we can meet up for lunch or a beer."

Julie's new contact info is:

Julie Rutkowski
921 Pine Valley Road
Bayfield, CO 81122
(970) 884-5081
julielinn123@yahoo.com

Best wishes Julie—and thanks for everything! ☺

2004 MEMBERSHIP DUES

Dues, payable to AHS (\$40.00, \$15.00 for students) should be sent to:

Leilani Bew, AHS Newsletter Editor
Errol L. Montgomery & Associates, Inc.
1550 East Prince Road
Tucson, Arizona 85719
Phone: (520) 881-4912

ARIZONA HYDROLOGICAL SOCIETY
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AHS NEWSLETTER SUBMITTALS

Submittals and comments should be addressed and faxed to Leilani Bew at Errol L. Montgomery & Associates, Inc. by the 15th of each month. If you learn of something timely after the deadline has passed, call me, and we can discuss it.

Phone : (520) 881-4912
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