

SAN DIEGO ASSOCIATION OF GEOLOGISTS

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SDAG MEETING ANNOUNCEMENT

Wednesday, January 16, 2008

REGULATING LAND USE IN GROUNDWATER DEPENDENT AREAS OF SAN DIEGO COUNTY - ACHIEVEMENTS AND CHALLENGES

presented by

Jim Bennett, PG, CHG - County of San Diego Groundwater Geologist

Where: Catalina Room (southern end of MVCC) **SEE MAP, PAGE 2**
Marina Village Conference Center
1936 Quivira Way, San Diego, CA 92109

When: 5:30 pm – Social Hour
6:30 pm – Dinner
7:30 pm – Program

Directions: FROM INTERSTATE 5: Take the SEA WORLD DRIVE exit. From SEA WORLD DRIVE, take WEST MISSION BAY DRIVE on your right. When you see the large green sign that says QUIVIRA ROAD, get in the farthest left of the two left turn lanes. Turn left, go one very short block and turn left again. Drive about one half mile and MARINA VILLAGE will be on your right.

FROM INTERSTATE 8: Take the WEST MISSION BAY DRIVE exit to the right. You will be on INGRAHAM STREET for a short distance from which you will take the next exit marked WEST MISSION BAY DRIVE on your right. When you see the large green sign that says QUIVIRA ROAD, get in the farthest left of the two left turn lanes. Turn left, go one very short block and turn left again. Drive about one half mile and MARINA VILLAGE will be on your right.

Dinner: Italian Buffet. Beverage station. Dessert. Cash bar.

Cost: \$30 per person, \$15 for students, \$5 discount for CURRENT SDAG members and their guests. Add \$5 if you did not make a reservation.

Reservations: Make your reservation **online** at www.sandiegogeologists.org **no later than noon, Monday, January 14th.**

2008 EXECUTIVE COMMITTEE

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JIM BENNETT, PG, CHG - COUNTY OF SAN DIEGO GROUNDWATER GEOLOGIST

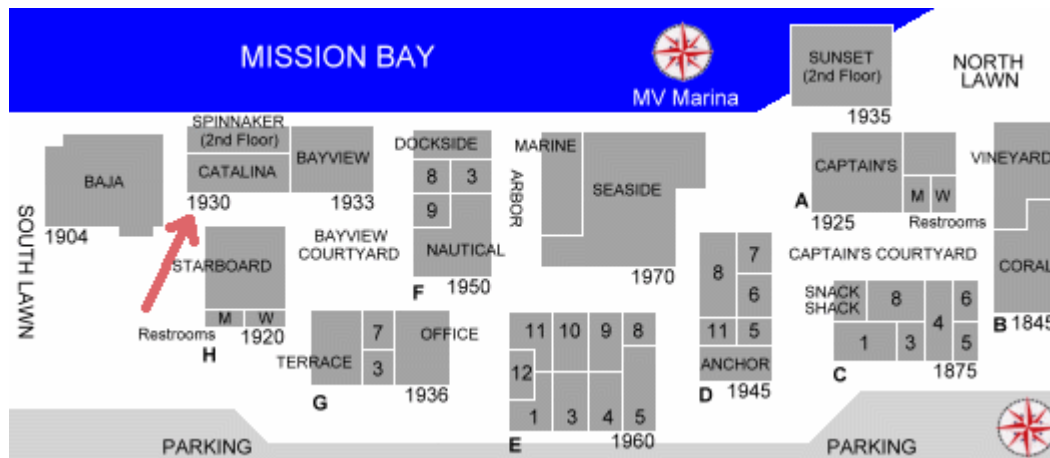
Mr. Bennett joined the County of San Diego in June 2005 and processes proposed groundwater discretionary permits in accordance with federal, state, and local regulations including the San Diego County Groundwater Ordinance and CEQA. In addition, Mr. Bennett is responsible for the updating and maintaining County's groundwater policies, procedures, and the County's groundwater monitoring network. Mr. Bennett previously worked in consulting for GeoSyntec Consultants and URS Corporation.

Regulating Land Use in Groundwater Dependent Areas of San Diego County – Achievements and Challenges

Nearly 2,750 square miles of the San Diego County are totally dependent on groundwater resources, which provide the only source of water for approximately 41,000 residents (U.S. Census Bureau, 2000). Over 70 percent of the unincorporated area of the County is underlain by fractured crystalline rock aquifers, which have very limited storage. Desert basins in the eastern portion of the County have relatively large storage capacities but extremely limited recharge. These factors severely limit the potential of additional growth and development in groundwater dependent areas.

The County has a unique set of regulations to regulate groundwater dependent discretionary projects within its jurisdiction through the San Diego County Groundwater Ordinance and the California Environmental Quality Act (CEQA). The Groundwater Ordinance has residential density controls, groundwater investigation requirements, and well testing requirements. Through CEQA, projects are required to address cumulative impacts to groundwater resources, and ongoing mitigation and monitoring requirements are required for some large projects associated with use permits.

The County currently is going through a comprehensive update of its General Plan, which will guide overall land use densities throughout the unincorporated areas of the County through the year 2020. As part of the update, a groundwater study is being conducted mainly in fractured rock aquifers covering an approximate 2,500 square mile area to indicate whether there will be a sustainable supply of groundwater for proposed land uses under maximum buildout of the General Plan.



2008 SDAG MEETING SCHEDULE - Mark your Calendars!

Meetings are usually on the 3rd Wednesday of the month but may change to accommodate speaker and meeting place schedules. Check here for updates!

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|-------------|--|
| February 20 | Steffi Schwabe, Clear Water Secrets: A Microscopic Discovery in the Cave Formation Story |
| March 19 | TBD |
| April 16 | Student Presentations |

ANNOUNCEMENTS

National Association of Geoscience Teachers Far Western Section Spring 2008 Field Conference
Geoscience Investigations in Northern San Diego County and Beyond: Student-Directed Explorations
March 14-16, 2008, hosted by Palomar, MiraCosta, and CSU San Marcos. We hope that you'll join us for an exploration of geoscience field trips in and around northern San Diego County. Unlike some NAGT field trips that explore remote locations, much of this conference will be held in an urban setting and highlight some of the field trips we do during half-day or full-day trips with students enrolled in our geology, geography, oceanography and Earth science classes. See www.palomar.edu/earthscience for more information.

ONE STOP WONDERS!

December 22 was the first day of winter. At 2:16 pm, there was a -1.6 foot tide, within a foot of the lowest tide of the year. A group of over 25 SDAG members and friends assembled for our ninth and last One Stop Wonder of 2007. Jim Stewart gave us his "cook's tour" of Scripps Pier. He handled the contracting of its construction in 1984 after the old 1916 pier was heavily damaged in a storm the previous year. We saw scientific instruments that measure daily water and air parameters. The pier is located north of the La Jolla Submarine Canyon, but south of the Scripps Branch. The canyon is one of North America's large submarine canyons. Jim talked about the various experiments that have been conducted in the vicinity of the pier. He showed us a rock which looks like an Indian mortar. He found it in about 55 feet of water south of the pier. Apparently it was discarded there thousands of years ago when sea level was much lower. From the pier, we had a great view of the cliffs to the north where we could see beds of mudstone, sandstone, and conglomerate of an Eocene submarine fan, whose deposits are visible in the cliffs over 3 miles north to Torrey Pines Beach. We walked north along the beach around a landslide on which the U.S. Fisheries building is located, to a basaltic andesite dike. Professor Monte Marshall gave an interesting presentation on a paleomagnetic studies that former students of his conducted. We saw the 1-inch diameter drill holes from which samples were collected. The paleomagnetic data are consistent with a dike that is nearly vertical and narrows slightly, then widens with depth. The dike continues offshore to the south. The magnetic signal of the dike was detected by the magnetometer in a boat to the Scripps Pier, and was actually detected south of the pier before the signal was lost as the depth increased. Back on shore we followed the dike across the beach to the north, past the "mushroom" house, to where the dike narrowed to about 3 feet. No exposure of the dike was observed in the cliff, although slough covered the lower portion. It's likely the dike simply pinches out. Professor Marshall offered to lead



a group of interested SDAG members and students to complete a study to map the paleomagnetism of the dike, supplement the study with thin-section analysis, and up-to-date radiometric age dating. Let's return in 2008! Thanks to everyone who have made SDAG's OSWs a success.

From the Coast Geological Society 2008 Desert Symposium Field Trip: April 19-21, 2008, "Development of the Colorado River and its entry into the Salton Trough." The field trip will explore geographic extent of the Bouse Formation and contrast fresh water deposits with deposits containing marine fossils. Examine sediments at Anza-Borrego that indicate when the Colorado River entered the Salton Trough. Drive from eastern Mojave Desert pinon-juniper plateaus to the Sonoran vegetation of the Colorado Desert. Contact wpresch@fullerton.edu more information.

Rocks with Provenance Needed for a Reference Collection for Typing and Sourcing San Diego Co. Artifacts

The San Diego Archaeological Center and local archaeologists need a county-wide reference collection of local rocks from outcrops. The collection will be an important resource for archaeologists involved in typing and sourcing stone artifacts from the San Diego area.

Norrie Robbins, adjunct faculty in the Dept. of Geological Sciences at SDSU, is spearheading this volunteer effort. She notes that geologists use a much wider variety of descriptors for rocks than do archaeologists. One of the objectives of this project is to cross-reference archaeological categories with geological ones to help develop a mutually understandable terminology and to improve sourcing. Rock specimens in the reference collection will be identified by spatial coordinates and both geological and archaeological descriptors.

Please contact Norrie (nrobbins@geology.sdsu.edu, 619-303-9095) with any questions and to arrange pick up of specimens. Specimens may also be placed in her mailbox at SDSU or dropped off at the Center (please indicate Attention: Rebecca Nathan). In addition, Dr. Robbins or Dr. Tim Gross will be available at most meetings of the San Diego County Archaeological Society (SDCAS) and San Diego Association of Geologists (SDAG) to accept specimens. Building the reference collection is a long-term project. There is no time limit for making your contributions.

2007/08 CORPORATE SPONSORS - THANK YOU!!

Corporate sponsors provide a significant portion of SDAG's operating and scholarship budget. In addition to monthly recognition for your contribution, you are entitled to a free Internet "link" from [SDAG's Website](#). We also list Corporate Sponsors in our annual SDAG Field Trip Volume. **Please consider SDAG sponsorship in 2008!**

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JOB OPENINGS!

Layne GeoSciences, a division of *Layne Christensen Company*, the nation's largest groundwater resource development contractor, is seeking candidates for a *Senior Level Hydrogeologist* position. This position will be based in our Fontana, CA facility. Qualified candidates will possess:

- BS/MS in Geology, Hydrogeology, or Engineering Geology with emphasis on groundwater resources
- Minimum 8-10 years of experience in performing hydrogeological studies (e.g., groundwater exploration and/or water resource development, production well installation and design, wellfield design, surface and borehole (geophysics))
- Excellent written and verbal communication skills, good computer skills

The successful candidate will be involved in hydrogeological studies at project locations primarily in the southwestern US. Candidate may have periodic travel requirements and must be a motivated, self-starting individual looking for a challenging, key position in an expanding organization.

Qualified candidates are encouraged to send a resume to: *Layne GeoSciences* ATTN: Mr. Tony Morgan *Manager-West Coast Operations* 11001 Etiwanda Avenue Fontana, CA 92337, 909-390-2833 909-390-6097 FAX

Resumes should be submitted by email to tmorgan@laynechristensen.com.

We are a drug-free and smoke-free workplace. EOE/M/F/D/V

Geologist/Hydrogeologist II - Brown and Caldwell

Evaluate, select, and apply standard geological techniques, procedures, and criteria to make adaptations and modifications. Work on assignments with clear and specified objectives. Investigate limited number of variables. Direct field crews drilling bore holes and collect samples of rocks and soil for chemical analysis.

Qualifications: MS degree or BS degree and 2-3 years of professional geological or hydrogeological experience.

Contact Candy Engelstad, HR/Administrative Manager, Brown and Caldwell, cengelstad@brwncald.com

Tel: (858) 514-8822 Fax: (858) 514-8833

URS Corporation, a nationwide, multidisciplinary consulting firm and the largest design firm in the country, has a strong project backlog in San Diego County in the transportation and water resources markets. We are seeking qualified candidates for the following positions for our San Diego office:

Engineering Geologist (Requisition #URS16201): Geologist/Engineering Geologist with 0 to 5 years of experience in consulting engineering firm; preferably with master's degree. Responsible for supervising field explorations, geologic mapping, and report preparation. Should be experienced in logging borings in soil and rock, knowledge of Caltrans investigation procedures a plus.

Geotechnical Engineer (Requisition #URS24208): Civil/Geotechnical Engineer with 0 to 5 years of experience in consulting engineering firm; preferably with master's degree. Responsible for planning field and laboratory programs, engineering analyses, and report preparation. Strong analytical skills and communication skills a must. URS is an Equal Opportunity Employer and strongly supports diversity in our work force (M/F/V/D). We offer competitive salaries and a comprehensive benefits package. For immediate consideration, please submit to mike_blackmore@urscorp.com or apply on-line under the Careers section of our website (www.urscorp.com) using the requisition number shown in parentheses above.

Tetra Tech EC, a world leader in environmental engineering and consulting, is seeking an **Entry Level Geologist in our San Diego, CA office.**

The qualified candidate will have a Bachelor of Science degree in Geology, hydrogeology, or related field with 0-3 years experience. Primary responsibility will be to assist senior personnel in the planning and execution of projects. The chosen candidate will learn a variety of field sampling and drilling methods for site investigation and remediation projects and perform the acquisition of samples (soil and groundwater) in the field. Good analytical and writing skills required. Up to 50% of time may be in the field on project sites mostly in the Bay area. Tetra Tech EC, Inc. is an Equal Opportunity Employer and we value team-oriented workplace and workforce diversity. We invite resumes from all interested parties including women, minorities, veterans and persons with disabilities. Tetra Tech offers their employees a comprehensive compensation package and the opportunity to work on large scale government projects.

Candidates who are interested in joining our dynamic team should submit a resume to Tetra Tech EC at northwest.web@tteci.com. Resumes should include salary requirements. Please visit our website at www.tteci.com or www.tetratech.com to see the array of services that we provide and exciting projects we are currently working on.

TN & Associates, Inc. specializes in environmental services, natural resources, infrastructure engineering, and construction services. Our San Diego office is currently looking to fill the following positions:

Staff Geologist: Geologist to perform office and field assignments for environmental site assessment and remediation projects. Position will involve soil borings, monitoring well installations, soil and water sampling, historical research investigations, data management, construction documentation and construction QA/QC, and report writing. Ability to adapt to both office and field environments a must. OSHA 40-hour training a plus. Periodic travel is required. **Project**

Geologist: Geologist with 3 to 7 years experience required in conducting all aspects of field investigations including limited site assessments, multi-task remedial investigations and remedial actions with a strong emphasis in technical writing skills. The ideal candidate will have experience in data analysis and reporting. PG registration and OSHA 40-hour training a plus. Work will entail some fieldwork and travel, mainly within California. Experience with government projects (DOD, USACE, AFCEE, Navy and USEPA) landfills and stormwater engineering/compliance a plus.

We offer a competitive salary, benefits package and friendly working environment. Equal Opportunity Employer. Please mail or fax your resume and letter of interest to: T N & Associates, Inc., 2247 San Diego Avenue, Suite 238, San Diego CA 92110, fax 619-291-8100.

CDM is looking for a fulltime **Engineering Geologist** to join its geotechnical division in the West Coast. The successful candidate will be responsible for the following:

- Conduct geologic field investigations on a wide range of public and private projects involving seismic evaluations, landslides, and subsurface soil, rock and water conditions for dams, buildings, water and waste water treatment facilities, transportation projects and remedial actions.
- Perform and supervise geotechnical and geo-environmental analysis, design, and construction engineering services.
- Provide project management for geotechnical and geo-environmental projects including the preparation of scope, schedules and budgets.
- Contribute to business development and proposal efforts and prepare technical reports.

- **Requirements:**

- Demonstrate the ability to perform quality-engineering geology services while adhering to project scope, budget, and schedule.
- Must have at least 10 years experience in geological engineering.
- M.S. in engineering geology or related discipline required
- Must be a CA Certified Engineering Geologist (CEG)
- Major project experience involving seismic and fault investigation is a must.
- OSHA 40-hour HAZWOPER training desirable.
- Excellent written and verbal communication skills required.

CDM has consistently earned industry recognition for our innovative project solutions. Recognition by respected professional organizations, such as the American Academy of Environmental Engineers, the American Council of Engineering Companies, and the Design-Build Institute of America, is a testament to CDM's delivery of exceptional service and the right total solutions for each client's needs. We are an equal opportunity employer. Qualified candidates can send resumes to mcshefferylj@cdm.com.

Principal Hydrogeologist

Looking to make a real impact at work? Ready to "Never be bored"? Natural born leader? Work for an industry leader.....Join MACTEC.

MACTEC Engineering and Consulting, Inc. is a leading consulting firm providing engineering, environmental and remedial construction services to public and private clients worldwide. Operating with over 3,000 employees in 100 offices nationwide with a global reach, MACTEC is currently ranked 31st among *Engineering News-Record's* top 500 design firms.

MACTEC's Irvine office is in search of a **Principal Hydrogeologist** to lead the geological and hydrogeological efforts, manage a team of committed technical staff members and advance business development opportunities within a variety of clients and projects. This is an excellent opportunity for the "natural born leader" who wants to utilize their technical and leadership skills!

Scope of Role:

1. Provides hydrogeological guidance and support for soil and groundwater remediation.
2. Develops and presents new approaches and services within environmental consulting market
3. Assumes project management roles and leads site investigation efforts
4. Conducts fate and transport modeling, pump tests and capture zone analysis
5. Develops site specific hydrogeological model.
6. Prepares and deliver technical reports, communications and presentations.

Key Qualifications:

1. BS/MS/PhD (Geology/Hydrogeology)
2. Min 10 years experience, must have consulting experience as well
3. Must have groundwater modeling experience, CA certification preferred
4. PG, CHG registration in CA required
5. Excellent communication and leadership skills

MACTEC's benefit offerings include health, dental, vision, short and long term disability, life insurance, paid vacation, sick, holidays, a 401(k) match and tuition reimbursement. More information can be found on our website at www.MACTEC.com

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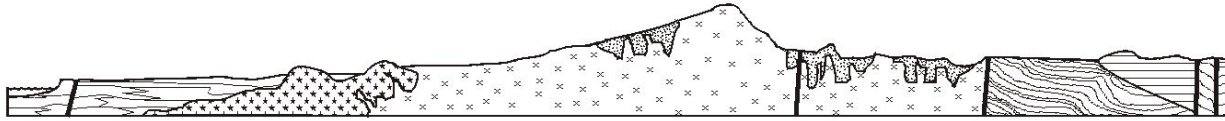
Please apply today via our website: www.MACTEC.com/ - click on Careers / CA- Irvine

Since 1986, clients have turned to **Ninyo & Moore** for innovative solutions to complex geotechnical and environmental challenges. As a leading geotechnical and environmental sciences engineering and consulting firm, Ninyo & Moore provides specialized services to clients in both the public and private sectors. With offices in Colorado, California, Nevada and Arizona, the firm is fully committed to being responsive, cost-efficient, and thorough in meeting its clients' project needs and objectives.

Ninyo & Moore Geotechnical & Environmental Sciences Consultants has immediate employment opportunities in our Denver, Irvine, Las Vegas, Oakland, Phoenix, and San Diego offices. Positions include Engineers and Geologists of all levels, including **Staff Engineers and Geologists, Project Engineers and Geologists, Staff and Project Environmental Scientists, Chief Geotechnical Engineer, and Construction Field and Laboratory Technicians.**

The successful candidates should have a BS or MS degree for staff-level positions and five years or more of experience for project to senior-level positions. The candidates should be detailed oriented and have excellent verbal and written communication skills. Professional Engineer (PE) and/or Professional Geologist (PG) registrations preferred.

Ninyo & Moore offers a competitive salary, excellent benefits and an opportunity for professional growth. Please visit our website for complete and detailed job descriptions and to submit your resume in confidence at www.ninyoandmoore.com/careers or mail to our corporate office at 5710 Ruffin Road, San Diego, CA 92123, Attention: Human Resources. EOE



SAN DIEGO ASSOCIATION OF GEOLOGISTS

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