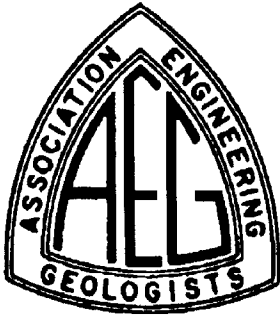


# Association of Engineering Geologists

Southern California Section

## NEWSLETTER - April 1990



**Bob Hollingsworth**  
Chairman  
(818) 889-0844

**Eldon Gath**  
Vice Chairman  
(818) 965-4874

**Charles Daugherty**  
Treasurer  
(213) 489-6964

**James O'Tousa**  
Membership Drive Chairman  
(818) 709-3872

**Kelly E. Rowe**  
Secretary/Newsletter Editor  
12 Issues/year-\$20 to "AEG"  
(Full-Time Students \$10/year)  
(714) 474-9344  
(818) 965-4048  
(818) 964-3702 FAX  
c/o Geraghty & Miller, Inc.  
Ground-Water Consultants  
17800 Castleton Street, Suite 175  
City of Industry, CA 91748  
Amer.Geop.Union TELENET  
KOSMOS Computer Mail  
Username: KROWE

2550 Beverly Blvd.  
Los Angeles, CA 90057

### Dinner Meeting *Tuesday April 10th*

- The Quiet Cannon Restaurant  
901 North Via San Clemente  
Montebello
- Cost - \$20.00 (Full-Time Students - Free)
- For reservations call by April 6th  
Marion (818) 889-0844 (Grover Hollingsworth & Assoc.)  
(Leave Your Name & Number of People in Your Party)

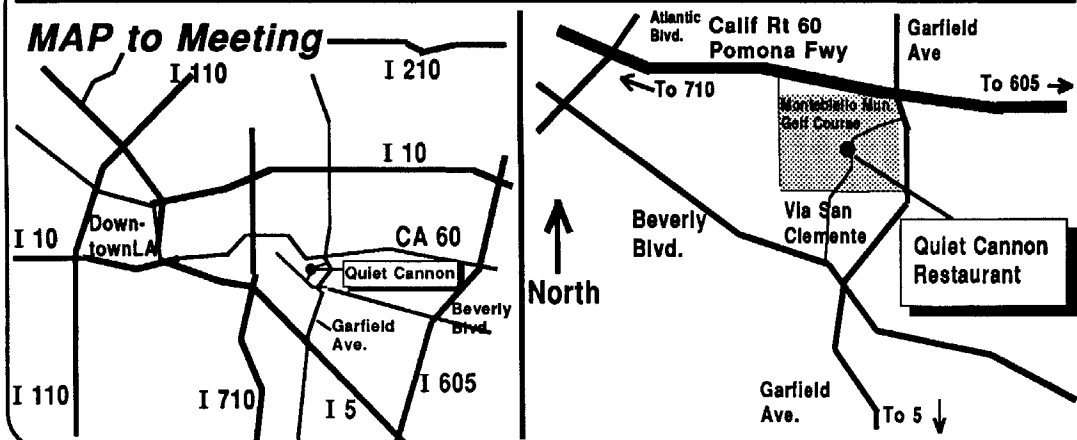
**Make reservations by Noon on the Friday before the Meeting**

- 5:30 Social Hour
- 6:45 Dinner
- 7:30 Announcements
- 8:00 Program

### Program

**TOPIC** Landslide Dams:  
A World-Wide Geologic Hazard

**SPEAKER** Dr. Robert Schuster - Research  
Geologist/ Civil Engineer with the USGS  
Branch of Geologic Risk Assessment



# Program

## Topic & Speaker

### Landslide Dams: A World-Wide Geologic Hazard Dr. Robert Schuster

Landslide dams, which have reached heights as great or greater than the world's largest constructed dams, have proven to be significant hazards in many parts of the world. These natural blockages form in all kinds of physiographic settings, ranging from rock avalanches in steep-walled narrow valleys to sensitive-clay failures in relatively flat river lowlands. Many of these dams have failed catastrophically, causing major downstream flooding. Casualties from some of these floods have numbered into the thousands.

In the United States, two major landslides within the last 10 years have blocked streams, forming large lakes that have been hazardous to downstream populations. The 1980 2.8 cubic kilometer debris avalanche on Mount St. Helens in the State of Washington dammed the main stem and tributaries of the North Fork Toutle River, forming several lakes. The three largest of these - Spirit, Coldwater, and Castle Lakes - still exist, but their levels and volumes have been stabilized by construction of outlet structures. The 1983 Thistle landslide dammed the Spanish Fork River in central Utah, forming a 98 million cubic meter lake that inundated the small town of Thistle, resulting in the loss of 15 businesses, 10 homes, and railway switching yards. Costs of the Thistle landslide and resulting upstream flooding have been estimated at more than \$200 million.

Dr. Robert L. Schuster is a Research Geologist/Civil Engineer with the USGS at Denver. For over the last 10 years he has been in the Branch of Geologic Risk Assessment. His career spans 40 years. He has been an instructor in engineering geology and civil engineering at Purdue U., a Professor of Civil Engineering at the U. of Colorado, a Professor and Chairman of Civil Engineering at the U. of Idaho. From 1974 to 1979 he was the Chief of the USGS Branch of Engineering Geology. He has published over 170 papers on engineering geology and geotechnical engineering. Most of these papers deal with the study of landslides in the United States and other countries.

**THIS MONTH**

April 1990



Kelly E. Rowe  
Hydrogeologist

This month Dr. Robert Schuster, with the USGS, will speak about "Landslide Dams: A World-Wide Geologic Hazard". Dr. Schuster is presently studying landslide dams in Tibet

Bob Hollingsworth reports that Dr. Martin Stout, Professor of Geology at Cal State L.A., is retiring June, 1990. He also reports that Dr. Stout had liver cancer surgery on March 22, 1990. An endowment scholarship fund is being established at Cal State L.A. in his name.

A minimum of \$5,000 is needed to establish the scholarship fund. At 8 percent annual interest this provides about \$400 per year for a student scholarship in Marty's name. Individuals or firms wishing to contribute should make checks payable to:

#### "Martin Stout Scholarship Fund"

Mail to: Gary Novak, Geology Department  
California State University, Los Angeles  
5151 State University Drive  
Los Angeles, California 90032

The week of April 22-28 is "National Science & Technology Week '90". It is sponsored by the National Science Foundation, 1800 G Street NW, Washington, DC 20550.

Our illustrious President, Gregory L. Hemenway, formulated the following proclamation for the 20th anniversary of "EARTH DAY" April 22, 1990.

The President of the United States, George Bush, has called on the U.S. citizenry to "rededicate themselves ... to protecting the environment". Some issues have become more clear while other environmental concerns have been found to be much more complex, since the first Earth Day, 22 April 1970. We, as geologists, know many of the triumphs and failings in the protecting our globe. Educated in some areas of environmental protection and mitigation, geologists have a duty to be activists, leaders and society's conscientiousness. "Should we allow the environmental deterioration to continue, man's fate may be worse than extinction" (Ron S. Boster).

Boster's comment is not hollow. Every person makes local decisions of economy, convenience and need. Science now cites

the persistence of these domestic consequences and their global warming, deforestation, acid rain, habitat protection and excessive use of earth's resources are only a few of the planetary issues affected by our everyday choices. Regional matters include conservation, toxic contaminant destruction, ground-water protection, waste reduction or waste-to-energy programs, and air pollution. Local problems may only be higher prices for energy or waste disposal, yet can extend to severe restraints on consumption or use. Engineering geologists are in the forefront of only a few of these issues, but our realization of problem significance requires our involvement. This involvement cannot be limited to our job duties; our complicity must extend to public action, education and participation.

The Association of Engineering Geologists is active in assisting members with education, communication and organizational structure for environmental concerns. The Aims of the Association address the need for societal involvement. Today, geologists lead the understanding of these complex problems; tomorrow, Association members will be educators and influencing decision makers. "Man shapes himself through decisions that shape his environment" (Rene Dubos).

**THEREFORE, I hereby proclaim Sunday, 22 April 1990, Earth Day. I call upon Association Sections and members to actively participate in formal Earth Day or Earth Week, 15-21 April 1990, activities for the benefit of both our members and our planetary community.**

**Please note that the MAY 1990 AEG SCS meeting HAS BEEN RELOCATED TO: The Airtel Plaza Hotel, 7277 Vaojean Ave., in Van Nuys. It is in the central San Fernando Valley area. The selection of this site for the May meeting is to provide a more convenient location to meet for the AEG members living in the western and northern Southern California Section area. It is obviously difficult for members working in the Santa Barbara, Ventura or Bakersfield areas to come to meetings at the Quiet Cannon Restaurant, in Montebello. A similar relocation of the monthly meeting will occur in September at a restaurant in southern Orange County, to attract San Diego and Orange County AEG SCS members.**

Last month, Dr. David D. Jackson, from UCLA spoke about the use of geodetics in the study of earthquakes and crustal deformation. Because of his notoriety involving the dispute over the existence of the "Palmdale Bulge" he explained that it simply was the result of survey errors. For example, different survey crews had different equipment, and benchmarks located in hardrock areas were less susceptible to settling than those located in surficial sediments.

Dr. Jackson said that the GPS (Global Positioning Satellite) Program utilizing satellite ground-surface location technology can accurately measure 1 out of 10,000,000 units of length. Information from this program has been used to assess the earthquake potential throughout California. Dr. Jackson said that the offshore fault system, off southern California, helps take up total slippage along the San Andreas Fault System here in a broader area than the more narrow areas of the San Andreas Fault System in northern California. The southern California offshore area has potential for earthquakes.

**Charles Daugherty, AEG SCS Treasurer, reports that at last month's meeting a total of 39 people called in reservations, as requested, on the Friday before the meeting. However, a total of 93 people showed up on Tuesday, most without reservations. This behavior upsets the coordination of the meeting and the restaurant. Therefore, please make your reservations before or on the Friday before the meetings and show up. The May meeting will be held at the Airtel Plaza Hotel in Van Nuys. They require additional advance notice for the number of reservations for the meeting and restrict the number of last-minute reservations they will accomodate. It is important for the coordination of the meetings that you provide sufficient notice of your reservation and to notify us if you plan to cancel.**

Under ASTM Committee D-18 on Soil and Rock, Subcommittee D-18.21 on Ground Water and Vadose Zone Investigations is developing standards for methods and materials used in the conduct of ground water and vadose zone investigations and monitoring. The Subcommittee is chaired by David M. Nielsen of Blasland, Bouck, and Lee, Inc., Westerville, Ohio. Sections within the Subcommittee have been formed to address a variety of narrower subjects. The papers from the ASTM "Symposium on Field Methods for Ground Water Contamination Studies" held Feb. 2-7, 1986 in Cocoa Beach, FL, have been published as ASTM Special Tech. Pub. (STP)-963 "Ground Water Contamination: Field Methods," edited by Gene Collins and A.I. Johnson. It may be purchased from ASTM headquarters, 1916 Race St., Philadelphia, PA 19103.

Selected papers from the January 26-28, 1988 symposium on "Standards Development for Ground Water and Vadose Zone Monitoring Investigations" were compiled and published in ASTM STP-1053 "Ground Water and Vadose Zone Monitoring" edited by David M Nielsen and A.I. Johnson.

The next meeting of Committee D18 and of Subcommittee D18.21 is at the Hyatt Regency Hotel, San Francisco during June 18-22, 1990. The next symposium to be sponsored by Subcommittee D18.21 is being organized as "Symposium on Ground Water and Vadose Zone Investigations-into the 1990s" for San Diego during the last week of January 1991. The Call for Papers has recently been distributed: the 300-500 word abstract is due June 1, 1990; the final manuscript is due November 30, 1990.

Continued from page 3

Membership in ASTM Subcommittee D18.21 is open to any person interested in ground water or vadose zone investigations. For additional information contact: (215)299-5516 Robert Morgan, Group manager, ASTM 1916 Race St., Philadelphia, PA 19103

**SDAG annual field trip first call for papers.** Field trip is scheduled for October 20th and will cover geotechnical issues, e.g., slope stabilization, deep fill monitoring, fill saturation and ground improvement techniques. If you would like to contribute a paper, contact John Hoobs, at Geocoin Inc., (619)558-6900.

**The Dibblee Geological Foundation has set Saturday, May 5th, as the date for "A Day in the Field with Tom Dibblee in the Santa Monica Mountains".** The foundation is asking for a minimum donation of \$35.00 per person, including field trip and BBQ. The left-over proceeds from this event will be used to publish additional geologic maps of the current Dibblee - Santa Monica Mountains series. The previous "Day in the Field with Tom Dibblee" was a great success for all participants. For reservations please contact, by April 20th, John R. Powell (805) 653-5556 or write to John, c/o Staal, Gardner & Dunne, Inc., 121 North Fir St., Suite F, Ventura, CA 93001. Helmut Ehrenspeck (805) 968-0481 is also a contact for this event.

**The Technical Section of the California Groundwater Association** held its first Southern California Section meeting. It was an informal dinner meeting held at the Days Hotel in Diamond Bar on March 21. There were a total of 45 people who attended, comprised of vendors, and consulting scientists and engineers. Future regularly-scheduled meetings are being planned to provide a forum for discussing ground-water issues among regulators, drillers, vendors, and consultants. For additional information call Thomas E. Nuckols, with Bryan A. Stirrat & Assoc., at (714)598-9803.

## Seminars/Meetings/Field Trips

### APRIL 1990

**2-6"Annual Engineering Geology and Soils Engineering Symposium"** Idaho State University, Pocatello, Idaho Short Course 2-3: Design of Shallow Foundations with Microcomputers. CONTACT: (208)236-3273 - Dr. Robinson, Office of Continuing Education, Non-credit Programs P.O. Box 8062, Pocatello, ID 83209

**2-6"12th Annual Groundwater Analysis and the Design of Dewatering Systems"** Orlando, FL. Univ. of Missouri at Rolla Continuing Education (UMRCE). CONTACT: UMRCE (800)752-5057 Continuing Education, 119 Mechanical Engineering Annex, UMR, Rolla 65401-0249

**2-6"4th Annual Short Course on Soil Dynamics and Foundation Engineering"** St. Louis, MO. Univ. of Missouri at Rolla Continuing Education (UMRCE). CONTACT: UMRCE (800)752-5057 Continuing Education, 119 Mechanical Engineering Annex, UMR, Rolla 65401-0249

**8-12"High Level Radioactive Waste Management"** CONTACT: ASCE.

**9-11"UNIX\*C + "** San Francisco, CA. USENIX Association. CONTACT: USENIX Conference Office, (714)588-8649 22672 Lambert St., Ste. 613, El Toro, CA 92630.

**16-20"14th Embankment Dams-Soil Aspects"** Orlando, FL. Univ. of Missouri at Rolla Continuing Education (UMRCE). CONTACT: UMRCE (800)752-5057 Continuing Education, 119 Mechanical Engineering Annex, UMR, Rolla 65401-0249

**17-19"HAZMACON '90"** Anaheim, CA. Assoc. of Bay Area Governments (ABAG), AEG, et.al., Hazardous Materials Conference Exposition CONTACT: (415)464-7951 Terry Bursztynsky, P.E., ABAG, P.O. Box 2050, Oakland, CA 94604

**17-20"Short Course - High Resolution Common Offset Shallow Seismic Reflection Surveying"** Sunnyvale, CA. EG&G Geometrics CONTACT: (408)734-4614 Myra Crettol, EG&G Geom., 395 Jave Drive, Sunnyvale, CA 94089

**17-20"The National Forum on Education and Continuing Development for the Civil Engineer - Setting the Agenda for the 90's and Beyond"** Las Vegas, NV. ASCE - at Ceasars Palace and UNLV CONTACT: Amer. Soc. Civil Eng., Education Activities Division, P.O. Box 832, Somerset NJ 08873-0832.

**22 "EARTH DAY - 20 YEARS LATER",** at locations throughout the U.S. and around the world. Theme: What has happened over the last 20 years and what direction are we going to preserve and improve our living space.

**30-5/4"12th Annual Fundamentals of Grouting"** Denver, CO. Univ. of Missouri at Rolla Continuing Education (UMRCE). CONTACT: UMRCE (800)752-5057 Continuing Education, 119 Mechanical Engineering Annex, UMR, Rolla 65401-0249

### MAY 1990

**5-Saturday"A Day in the Field with Tom Dibblee in the Santa Monica Mountains"** Malibu State Park, CA. \$35/person CONTACT: (805) 653-5556 John Powell, c/o Staal, Gardner & Dunne, Inc. 121 North Fir Street, Suite F, Ventura, CA 93001, or (805) 968-0481 Helmut Ehrenspeck. Dibblee Geological Foundation, P.O. Box 60560, Santa Barbara, CA 93160

**7-9"UNIX EXPO West"** Los Angeles, CA. Los Angeles Convention Center. CONTACT: National Expositions Company, Inc., 15 W. 39th Street., N.Y., NY 10018.

**7-11"Petroleum Hydrocarbons and Organic Chemicals in Ground Water: Use of Models for Site Assessment and Remediation"** Cost: \$1,250. Los Angeles Airport Marina Hotel, 8601 Lincoln Blvd. Marina del Rey, CA CONTACT: (619)943-7694 Lois Elms, Coordinator, Hydrocarbons in Ground Water, 6992 El Camino Real, Suite 104-263, Carlsbad, CA 92009.

**14-17"Fourth National Outdoor Action Conference on Aquifer Restoration, Ground Water Monitoring and Geophysical Methods"** Las Vegas, NV. NWWA CONTACT: (614)761-1711 National Water Well Assoc. P.O. Box 182039, Dept. 017, Columbus, OH 43218

**18-21"Presentation of Papers & Field Trip for: Mojave Desert Quaternary Research Symposium "** The Mojave Desert Quaternary Research Center San Bernardino County Museum. CONTACT: (714)798-8570. Jennifer Reynolds, Editor LMDQRC San Bernardino County Museum, 2024 Orange Tree Lane, Redlands, CA 92374

### INDEPENDENT INSTRUCTORS FOR GEOLOGISTS AND ENGINEERING GEOLOGIST EXAMS - COURSE LOCATIONS FOR 1990


REG Review, Inc. is starting classes for the upcoming geologist exams in September. They will be held at the following locations over the next few months.

San Diego (SD) Limit 15	Pasadena (LA) Limit 20	Costa Mesa (CM) Limit 15
Woodward Clyde Consuls.	Converse Environ. West	Converse Environ. West
1550 Hotel Circle North	3393 East Foothill Blvd.	151 Kalmus Drive, Suite H
San Diego, CA 92108	Pasadena, CA 91109	Costa Mesa, CA 92626

SERIES I COURSES April June, 1990 SERIES II COURSES July August, 1990  
For more information CONTACT: REG REVIEW, Inc. 6555 Oakwood Drive Oakland, CA 94611 (415) 339-3771 Lisa Dirth (415) 852-9099 Patti Osiecki

Series I and Series II Courses present the same material in two five hour sessions. Courses cover the major topics expected on the California Geology Registration Exam. Major emphasis is given to understanding the principles of structural geology, map interpretation, California geology, geologic hazards, hydrogeology, and engineering geology. Questions and problem solving are an integral part of the course. Class size is limited (from 15 to 20 people depending upon course location) to encourage individual participation and preparation. Provided with the course registration is the 1990 edition of the Study Manual. A Manual will be mailed to all course preregistrants upon receipt of fees.

The 1990 Study Manual is a copyrighted publication that presents technical information important to know for the California Geology Registration (R.G.) and Certified Engineering Geology (C.E.G.) Exams. Technical text, figures, sample problems and answers, and a reading list are highlights of the book. The Study Manual is also offered for separate purchase. The price of \$75.00 includes sales tax (where applicable), Priority Mail postage, and handling. Rush order postage is extra. Estimated publication date for the 1990 Study Manual is March 1, 1990.



**GERAGHTY  
& MILLER, INC.**  
*Environmental Services*

---

1050 Marina Way South    17800 Castleton St., Ste 175  
Richmond, CA 94804    City of Industry, CA 91748  
(415)233-3200    (818)965-4048

*Offices Located Nationwide*

## Professional Services

Business-card size advertisement  
space available for \$ 50.00/year.



SIERRA BRAVO COMPANY

### GEOPHYSICS FOR:

#### ENGINEERING-GROUNDWATER-ENVIRONMENT

- SEISMIC REFRACTION/REFLECTION
- GROUND PENETRATING RADAR
- ELECTRICAL
- MAGNETICS
- GRAVITY

PROPERTY TRANSFER SURVEYS  
SITE ASSESSMENT SURVEYS  
GEOPHYSICAL EQUIPMENT RENTAL

PO BOX 152 WOODBRIDGE CA 95258  
(209) 339-8791

### RICH DARBY



### CO. EXCAVATION CO. DRILLING, LP

"WE DRILL & DIG HOLES."  
TESTPITS/BORINGS, CAISSONS, FOOTINGS, FOUNDATIONS  
GRADEBEAMS, UNDERPINNINGS/PADS, SEEPAGE PITS

#### L.A. COUNTY:

1117 E. WALNUT STREET  
P.O. BOX 94656  
PASADENA, CA 91109-4656  
(818) 793-5293

#### ORANGE COUNTY:

P.O. BOX 3241  
COSTA MESA, CA 92628-9998  
(714) 645-3127

## MOORE & TABER GROUTING DIVISION

Compaction Grouting • Level Surveys  
Slope Incliner Installation

1290 N. HANCOCK, P.O. BOX 19079 • ANAHEIM, CA 92817 • (714) 779-2591

5620 DISTRICT BLVD., SUITE 103 • BAKERSFIELD, CA 93313 • (805) 833-1743

16760 WEST BERNARDO DR. • SAN DIEGO, CA 92127 • (619) 487-2113

San Diego

# Ninyo & Moore

Irvine

Geotechnical and Environmental Sciences Consultants

- Soil Engineering
- Geology
- Hydrogeology
- Environmental Assessment
- Regulatory Compliance

**Gregory T. Farrand**  
Principal Geologist

10225 Barnes Canyon Road • Suite A-112  
San Diego, California 92121  
Phone (619) 457-0400 • Fax (619) 558-1236

## DID IT MOVE, OR DIDN'T IT?



Our automated  
deformation-sensing systems  
give you the graphic answer!

Now, track the tilts, bulges, bends and  
displacements of • Dams • Tunnels  
• Tanks • Landslides • Bridges  
• Buildings • Roofs • Any Structure.

Our systems take continuous static and dynamic readings. Then  
report to you. Wherever you are in the world.

- ▶ Structural testing
- ▶ Warning of unsafe conditions
- ▶ Long-term monitoring

**APPLIED  
GEOMECHANICS**

1336 Brommer St., Santa Cruz, CA 95062, (408) 462-2801 • Fax (408) 462-4418

## ZIP-A-DIP®

Combination protractor, scales, and most  
efficient apparent dip calculator designed.

Only \$3.00 each (2-10/\$2.50; 11+/\$2.00). Brochure describes ZIP-A-DIP,  
stereonet plotters, stratigraph, field bags and quantity prices.

Please send brochure only

ZIP-A-DIPS Quantity \_\_\_\_\_ Amount \$ \_\_\_\_\_

Name \_\_\_\_\_

Address \_\_\_\_\_

To: ZIP-A-DIP, 1318 2nd St. #25, Santa Monica, CA 90401 USA

## One Source for All Your Geotechnical Instruments

We offer a full line of **Geotechnical  
Instruments** with accessories and  
support at **competitive** prices. Ask us  
about our rental systems.

- Inclinometers
- Incliner Casing
- Tilt Sensors
- Piezometers
- Settlement Systems
- Load Cells
- Data Acquisition  
Systems

**TERRA**   
TECHNOLOGY CORP.

A SUBSIDIARY OF ROCHESTER INSTRUMENT SYSTEMS  
3860 148th Avenue N.E., Redmond, Washington 98052 USA  
Phone: (206) 883-7300 Telex: 15-2070 Fax: (206) 882-1412



**Amer R. Al-Alusi**  
President

Compaction Grouting  
Lense Grouting  
Chemical Grouting  
PressGrout Piles

### Geotechnical Stabilization, Inc.

3970 Sorrento Valley Blvd., Suite A • San Diego, CA 92121  
619/546-0202 • FAX 619/546-3893

## Positions Available

Advertisements for Student & Part-Time "Positions Available" are Welcome. There is no charge for advertisement.

### Career Opportunities For Hydrogeologists, Geologists, Civil & Environmental Engineers

Openings are available for entry level (0-4 yrs experience) Hydrogeologists, Geologists and for senior level Civil & Environmental Engineers. Openings are available in the City of Industry office and the Newport Beach office. In addition, positions for experienced ground water and soils remediation specialists are available in offices throughout the United States. Salary is negotiable commensurate with experience. CONTACT: (818) 965-4048 Tom Sheahan-Industry or (714) 474-9344 Jim Norman-Newport Beach

or send resume to:  
Geraghty & Miller, Inc.  
Attention: N. Thomas Sheahan  
17800 Castleton St. #175  
City of Industry, CA 91748

### Career Opportunity For Geotechnical/Civil Engineer

Immediate openings are available for a California registered candidate with 5 to 10 years experience. Projects will include but not be limited to landfill design and construction which entails liner systems, surface and subsurface drainage, and pipeline design. Also, future possibilities may include setting up a soil testing laboratory and remediation systems design. Excellent communication and writing skills required, hydrology experience a plus.

CONTACT: (818) 848-0214 or send resume to:  
Law Environmental, Inc.  
3320 N. San Fernando Blvd.  
Burbank, CA 91504  
Attn: J. Johnson

### Career Opportunity For

Senior Hydrogeologist & Staff Environmental Scientist Management and staff level positions are available in the Burbank office. Salary is negotiable and commensurate with experience. Management positions requirements: California registrations, 5 to 10 years of experience, excellent communication and supervisory skills. Computer literacy a plus.

CONTACT: (818) 848-0214  
or send resume to:  
Law Environmental, Inc. (same address as above)

### Career Opportunity For Engineering Geologist

Immediate opening is available for an engineering geologist with 2 or more years of experience in field mapping, trench/boring logging, and report writing. B.S. in Geology required. Preferred skills include writing/verbal communication with laypersons, interest in neotectonics, landlides, and ground water. Salary commensurate with experience. CONTACT: (714) 888-2422 or send resume to:

Gary S. Rasmussen & Assoc., Inc.  
1811 Commercenter W.  
San Bernardino, CA 92408

### Career Opportunities For Geologists, Hydrogeologists Civil & Environmental Engineers

Openings are available for several positions. Staff Geologist Engineer; BS/1 year experience in waste management. Project Geologist/Hydrogeologist; BS/3 years experience or MS/2 years experience in waste management. Project Civil/Geotechnical Engineer; BS/3 years experience or MS/2 years experience in waste management. Senior Air Quality Scientist/Engineer; BS/7 years experience or MS/6 years experience as program manager, source testing.

CONTACT: (714) 546-0602  
or send resume to:  
The MARK Group, Engs.&Geols., Inc.  
Attention: David K. Rodgers, Principal  
1241 E. Dyer Road, Suite 130  
Santa Ana, CA 92705

### Career Opportunities For Engineering Geologists

Several positions are available in the Riverside County Planning Department. Current Opening: Special Projects Division. Qualifications: Bachelor's degree in geology or engineering geology. Selection procedure-Applicants who meet the minimum requirements will be referred to the department for employment consideration. Monthly salaries range for the following positions from: Assist. Eng. Geol.-Registered (CEG): \$3,178 to \$3938; Assist. Eng. Geol.: \$3,012 to \$3,731; Jr. Eng. Geol.: \$2,691 to \$3,334.

CONTACT: (714) 787-6125 or send resume to:  
Riverside County Personnel Dept.  
County Administrative Center  
4080 Lemon Street, Room 109  
Riverside, CA 92501-3664

### Career Opportunity For

Hydrogeologists, Geologists & Environmental Engineers Openings are available for entry level through senior level Hydrogeologists, Geologists and Engineers. Environmental experience should include proven field experience in UST programs, site characterization, remedial action plans and/or feasibility studies for soil and ground water contamination. Requirements are a record of successful project development and management. Excellent verbal and written skills required. Advanced degree preferred. Competitive salary.

Send resume to:  
Converse Environmental West  
Attention: J.A. Campbell  
67 W. Bellevue Dr, Pasadena, CA 91105

### Career Opportunity For Staff Geologists

Openings are available for staff level positions in the engineering geology department of the San Bernardino office. Requirements include a bachelor's degree in Geology, approximately 2 years of experience in engineering geology (understanding of mass grading a plus), and writing and communications skills. Salary is negotiable and commensurate with experience.

CONTACT: (714) 889-8004  
or send resume to:  
Converse Consultants Inland Empire  
Attention: David E. Simon  
630 E. Brier Drive, Suite 100  
San Bernardino, CA 92408

### Career Opportunity For Geologist/Hydrogeol./E.G.

Opening is available for a project level Geol./Hydrogeol./Eng.Geol. with 3 to 5 years experience to direct field operations for characterization of contaminated sites. Strong candidate will have detailed knowledge of drilling, sampling, and installation of ground-water monitoring wells, excellent communication skills and be computer literate with writing skills. Salary is negotiable and is commensurate with experience.

CONTACT: (714) 541-9353  
or send resume to:  
Remedial Action Corp.  
Attention: David A. Sommers  
505 N. Tustin Ave., Suite 160  
Santa Ana, CA 92705

Kelly E. Rowe  
AEG Secretary/Newsletter Editor  
c/o Geraghty & Miller, Inc.  
17800 Castleton Street, Suite 175  
City of Industry, CA 91748

