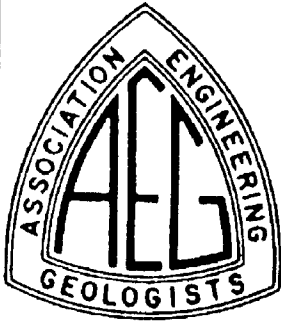


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Southern California Section

NEWSLETTER- April 1993

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Dinner Meeting Tuesday, April 13th

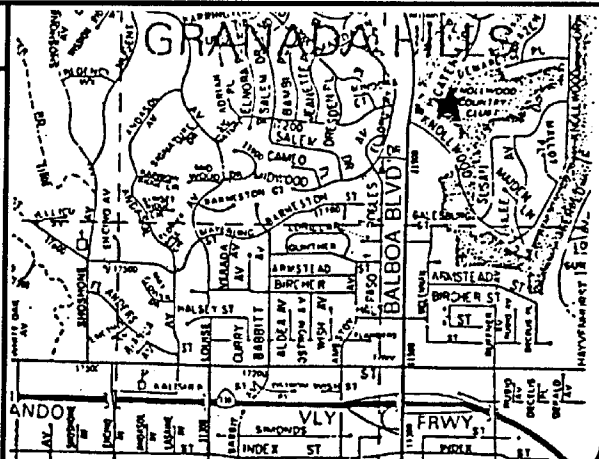
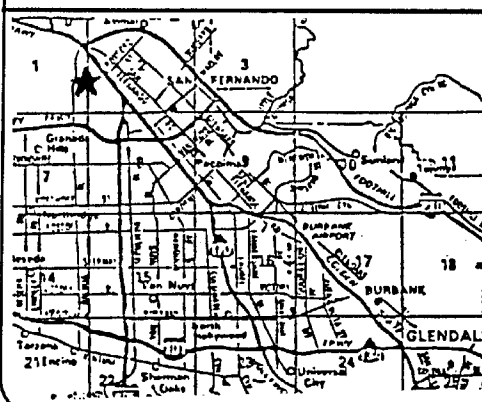
- Knollwood Country Club
12024 Balboa Boulevard
Granada Hills
- Cost - \$25.00 (\$5 with valid Student I.D.)
- Make reservations by Friday, April 9th!!!**
URS Consultants 714-660-7676
(Leave Your Name & Number of People in Your Party)
- 5:30 Social Hour
- 6:45 Dinner
- 8:00 Program

Program

"Engineering Geology for Design of the Kern River Pipeline, Wyoming to Southern California"

by
Dr. Jeffrey R. Keaton
SHB AGRA, Inc.
Salt Lake City, Utah

MAP to Meeting



PROGRAM

Topic & Speaker

Short Topic: UPDATE, The Association of Engineering Geologists. Dr. Jeffrey R. Keaton, President.

Topic: Engineering Geology for Design of the Kern River Pipeline, Wyoming to Southern California.

Speaker: Dr. Jeffrey R. Keaton, SHB AGRA, Inc.

Engineering geologic evaluations of conditions, many of which constitute some form of natural hazard, along the alignment of the proposed Kern River Pipeline were conducted to provide a basis to 1) reduce the risk of damage to the pipeline which could result in a threat to public safety, 2) reduce the owner's exposure to loss of pipeline function (i.e. economic loss), and 3) comply with mitigation measures required by the Federal Energy Regulatory Commission (FERC) as part of the project Final Environmental Impact Statement (FEIS). The FERC developed 156 measures to mitigate environmental impacts related to the proposed pipeline. Of these, 17 pertained to geology and geotechnical engineering. Specific scientific and engineering studies were conducted to address design issues related to avalanches volcanic eruption, fault rupture, liquefaction, slope instability, hydrocompaction, subsidence, springs, shallow groundwater, and stream crossings.

Avalanche, volcanic eruption, hydrocompaction, and subsidence processes, and springs and shallow groundwater were found to represent insignificant hazards to a buried, high-strength pipeline for a variety of reasons and little in the way of special design provisions were warranted. Quaternary faults were crossed at seven locations in a way intended to reduce the risk of damage in the event of a future surface rupture event. Liquefaction-induced ground failure, found to be a potential hazard in the Salt Lake Valley and at Muddy River in southern Nevada, was mitigated by using medium dense sand to limit adhesion of the ditch backfill on the epoxy-coated pipe. Slope instability was mitigated over most of the project length by careful selection of the alignment to avoid areas with evidence of past slope failure. The Thousand Peaks Landslide Area in Chalk Creek east of Coalville was the only area where landslide deposits could not be avoided. Drainage provisions, select sand backfill, and monitoring were used to mitigate potential damage in this unpopulated area.

Streams were evaluated for scour and lateral bank migration hazards associated with the 100-year flood event. Scour depths caused by the 100-year flood were calculated using several empirical equations. The pipeline generally was buried 5 to 7 feet below

the stream bed at most moderate to major drainages and concrete-coated pipe or concrete set-on weights were used to maintain negative buoyancy during periods of high water and to provide some protection from debris moving during floods. The mitigation approach to bank migration hazards consisted of placing sags in the pipeline back from the active channels far enough for channel migration processes to continue at approximately the same rate without exposing the pipeline.

Dr. Keaton received a B.S. in Geological Engineering from the University of Arizona, an M.S. in Engineering (Geotechnical) from UCLA, and a Ph.D. in Geology from Texas A&M University. His 22 years experience as a geological and geotechnical consultant includes evaluation of natural hazards, development of earthquake design parameters, and characterization of sites using detailed engineering geology. Dr. Keaton is President of the Association of Engineering Geologists, member of the Earthquake Engineering Research Institute, past Chairman of the Engineering Geology Division of the Geological Society of America, past member of the control Group of the Engineering Geology Committee of the Geotechnical Engineering Division of the American Society of Civil Engineers, and Chairman of the Committee on Engineering Geology of the Transportation Research Board. He is a registered geologist and a certified engineering geologist in California, and a registered civil engineer in California and Utah.

Job Opportunities

Staff Geologist with 3 to 5 years of hillside grading experience wanted. Send resume to Zeiser Kling Consultants, Inc., 200 Baker Street, Suite 101, Costa Mesa, CA 92626. Equal Opportunity Employer.

U.S.G.S. Landslide Program Meeting

On March 25 and 26, 1993, AEG members Jim Slosson and Rob Olshansky attended the U.S.G.S. Landslide Program review committee meeting in Golden, Colorado representing interests outside of the survey. Drs. Slosson and Olshansky provided advice concerning the direction the program should take and feedback on the utilization of the product by consultants, planners, and local governments. The survey scientists are currently trying to increase funding for the program and focus their research efforts in areas directly related to landslide mitigation.

Chairman's Column

Kelly E. Rowe

As I'm writing this I have a few minutes to go before I go up to Salt Lake City to attend the semi-annual meeting of the AEG Board of Directors. So excuse my typos. Next month I'll update you on the decisions that are to be made regarding the Association. I expect some news of interest for you.

At our April meeting, at the Knollwood Country Club in Granada Hills, we will entertain nominations for the upcoming elections for officers for our section. Several of us will move upward. I will move out, to a more relaxed mode of participation (as most past chairman do).

Jeff Keaton is our Association's President and I am pleased that he will be coming to our meeting. His subject, the Kern Pipeline Project, is a fascinating job for all types of geologists. I hope to see you there.

The section needs AEG members attending the upcoming AAPG Pacific Section annual meeting, May 5 to 7, to staff our booth. AEG is a Review of the meeting announcement shows that a large number of AEG members and affiliate members will be giving papers. Call me and let me know if you are interested in representing the AEG at the meeting. You can at least stop by the booth and chat with the other professionals and exhibitors in the exhibition area. The AAPG meeting is sharing the exhibition hall with the Spring HazMat West meeting at the Long Beach Convention Center.

Upcoming Short Courses on June 5th and August

Immediately upcoming is a short course to be given by **Dr. Roy Shlemon on Saturday, June 5th That's the weekend following the Memorial Day 3-day weekend.** Many of you know Roy is a great speaker. He has 25 years of experience consulting for private and government on Quaternary geology, soil stratigraphy and geomorphology problems throughout the world. He kindly obliged my request to provide a course for the interest of the professionals in Southern California through our section. The title of the course is "*Application of Soil Stratigraphy to Environmental & Engineering Geology*". I am certain that anyone who attends will be rewarded with a unique perspective on these issues. The next newsletter will contain an extended outline of the course for your consideration, along with a registration form for you to fill out. The cost of the course will probably be about \$75.

Once again, I volunteered myself to be the contact for questions about our short courses. It is a pleasure to see that some useful work is being done by volunteers.

Another short course, a reprise of my wonderful course on "**Groundwater Monitoring and Remediation Techniques**", will be given, sometime in August. I promise it will be better than the last time it was given at the AEG annual meeting in Long Beach.

If you have any ideas on topics for short courses please feel free to let me know. For example, the recent CDMG course was started based upon concerns and disputes AEG members had on the way reviews were being conducted by the state on engineering geology and seismicity reports. AEG is a forum for people to discuss and promote engineering, environmental and ground-water geology. Feel free to join in.

AEG Southern California Section Education Committee Database

Once again, I formally appeal to you again to participate in the founding of the AEG So. California Section Education Database.

The Education Committee has compiled a significant collection of slides related to geology and engineering geology for presentation to students ranging in age from ?-fifth grade to high school. Lessons have also been collected for use to educate students on principles of geology and engineering. These materials are no good to anyone if they are not shared. We can all be a little more altruistic in sharing our understanding of what we know to future scientists, engineers, and voters. Therefore, at this juncture feel free to notify the official education database manager (me) that you are interested in participating in this database.

The database will contain the current names, addresses and telephone numbers of interested teachers and geologists in Southern California. (1) Interested teachers will contact the education database manager on the availability of geologists to assist them in teaching their students. (2) The names and telephone numbers of listed geologists who live locally to the teacher in the database will be given to the teacher. (3) Materials available from the Education Committee will be coordinated and distributed to the geologists for use with the students. Education Committee members will have 2 to 3 repositories available in Southern California to obtain the materials for classes. There have been volunteers since last month's appeal, but I want more. **You.**

Sounds pretty simple. It is. It only takes communication. So far as a start there are over 50 teachers and geologists in the database. It would be nice to include all of the AEG members in Southern California in the database, but this will not be done without your approval. So let me know. One or two visits a year to tell kids what you know about geology can't be that tough to do. Give me a call, or leave a message.

At the March AEG/ASCE Geotech. Group joint meeting Buzz Spellman is soliciting support for the creation of the "Hydrogeologist" specialty with the California Board of Registration for Geologist and Geophysicists. In this capacity, he provided a form letter supporting this issue himself, which he had available at the meeting.

The text of the letter is as follows:

"...We understand Senator William Craven's Senate Bill 433 titled "Geologists and Geophysicists: Hydrogeologist Certification" will appear before the Senate Business and Professions Committee on April 12, 1993 for your approval. The Board of Registration for Geologists and Geophysicists wholeheartedly endorses and supports this very important legislation.

We believe that establishing the Hydrogeologist specialty in state law would preclude incompetent practice and resultant damage and loss. Our specialty would produce, for the benefit of all Californians a pool of specialists who are educated, trained and examined by the board. These individuals could save the state wasted revenues and increase the general health and safety of the state's consumers..."

Send a letter to the following Senators if you support this Bill:
The Honorable Senator _____
California State Capitol
Sacramento, California 95814

Sen. Ruben S. Ayala, Room 2082 - 34th Dist.
Sen. William A. Crave, Room 3070 - 38th Dist.
Sen. Leroy F. Green, Room 3082 - 6th Dist.
Sen. Gary K. Hart, Room 4074 - 18th Dist.
Sen. David G. Kelley, Room 2054 - 37th Dist.
Sen. Lucy Killea, Room 4062 - 39th Dist.
Sen. Milton Marks, Room 5035 - 3rd Dist.
Sen. Dan McCorquodale, Room 4032 - 12th Dist.
Sen. Herschel Rosenthal, Room 4070 - 22nd Dist.
Send a letter today!

BOOK SALE

Association of Engineering Geologists, Southern California Section

- Blake, T., and Larson, R.A., Eds., 1991, Engineering Geology along the Simi-Santa Rosa fault system and adjacent areas, Simi Valley to Camarillo, Ventura County, California: Guidebook for the Southern California Section of the Association of Engineering Geologists Annual Field Trip, August 24, 1991, Volumes 1 and 2, 383 pgs., 4 map sheets. \$40.00
- Buckley, C.I., and Larson, R.A., Eds., 1990, Geology and Engineering Geology of the western Soledad Basin, Los Angeles County, California: Guidebook for the Southern California Section of the Association of Engineering Geologists Annual Field Trip, November 3, 1990, 185 pgs., 2 map sheets. \$25.00
- Buesch, D., Ed., 1979, Geomorphic Applications in Engineering Geology: A State-of-the-Art Short Course: Short course held at California State University at Los Angeles, November 10-11, 1979, reprinted by the Southern California Section of the Association of Engineering Geologists, 145 pgs. \$11.00
- Byer, J.W., Ed., 1975, Sycamore Canyon Fault, Verdugo Fault, York Boulevard Fault, Raymond Fault, and Sierra Madre Fault Zone: Guidebook for the Southern California Section of the Association of Engineering Geologists Annual Field Trip, September 27, 1975, 68 pgs. \$ 8.00
- City of Los Angeles, 1982, Geologic Maps of the Santa Monica Mountains, Los Angeles, California: 333 map sheets at 1" = 400', compiled by the Bureau of Engineering, Department of Public Works, City of Los Angeles, reprinted by the Southern California Section of the Association of Engineering Geologists, 342 pgs. \$26.00

1992 NEW ADDITIONS

- Sieh, K.E. and Matti, J.C., October 3-4, 1992, Earthquake Geology San Andreas Fault System Palm Springs to Palmdale, 35th Annual AEG Meeting, Guidebook and Reprint Volume. \$25.00
- Ehlig, P.L. and Steiner, E.A. Editors, October 2-9, 1992, Engineering Geology field Trips: Orange County, Santa Monica Mountains and Malibu. 35th Annual AEG Meeting, \$25.00 **Optional Map and Cross Section of Big Rock Mesa \$15.00
- Bulletin of the Association of Engineering Geology, Volume XX, Number 1. Contains "Geology of Long Beach, California". Limited Supply \$5.00
- Ebersold, D.B. Editor, October 10, 1992, Landers Earthquake of June 28, 1992, San Bernardino County, California Field Trip Guide. Limited Supply \$8.00
- Stout, M. L., Editor, 1992, Association of Engineering Geologists, Proceedings for the 35th Annual Meeting, October 2-9, 1992, Los Angeles, California. \$40.00
- Shurman, G. and Stosson, James, 1992, Forensic Engineering, Environmental Case Histories for Civil Engineers and Geologists. Academic Press, Inc. \$49.95
- Pipkin, B.W. and Proctor, R.J., Editors, 1992, Engineering Geology Practice in Southern California, Star Publishing \$79.95 plus a special charge of \$5.00 shipping and handling.

Books are available from: Joe Cota, Publications Chairman, AEG Southern California Section, c/o GeoSoils, Inc., 6634 Valjean Avenue, Van Nuys, California 91406, (818) 785-2158. Make checks payable to AEG Southern California Section. **Please add 8.25% sales tax and the following postage/handling charges:** \$2.50 for the first book and \$0.50 for each additional book.

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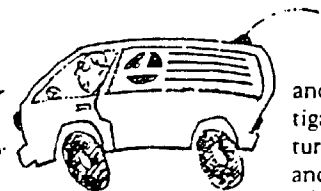
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Seminars/Meetings/Field Trips

April 1993

13 Southern California Section AEG Meeting, Knollwood CC. CONTACT URS (714)660-7676

18-22 Sixth Annual SAGEEP (Symposium on the Application of Geophysics to Engineering and Environmental Problems), Town and Country Hotel, San Diego, CA., CONTACT: Mark Cramer (303) 771-6101

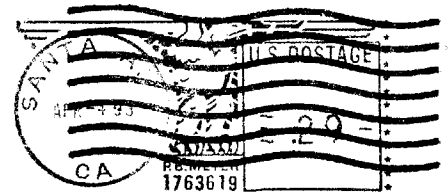
May 1993

25-27 The 7th National Outdoor Action Conference to Feature Aquifer Restoration, Ground Water Monitoring, and Geophysical Methods. Las Vegas, Nv. CONTACT NGWA (800) 551-7379

11 Southern California Section AEG Meeting, CONTACT URS (714) 660-7676

June 1993

5 Applications of Soil Stratigraphy to Engineering and Environmental Geology, presented by Roy J. Shlemon. Newport Beach, CA. CONTACT Kelly Rowe, URS (714) 660-7676



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