

AEG Inland Empire Chapter Newsletter

of the Southern California Section

November 2012 Vol.9 No. 2

www.aegsc.org/chapters/inlandempire

November Meeting & Speaker Announcement

“Characterization and Remediation of Deep Multi-Aquifer Systems Critical and Innovative Planning Strategies ”

Jim Larwood, cEG

AECOM

Wednesday, November 14, 2012

Marie Callender's, Temecula, CA

RSVP to aeginland@gmail.com by **Friday November 9, 2012**

See pages 3 & 4 for more meeting details



Drill rigs investigating multiple aquifers at the Santa Clarita site that will be discussed in this month's meeting presentation.

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Chair's Message

Thanks to all of you who made it out to our October 23rd meeting in Corona! We had a very successful turnout to "kick off" our new year with Dr. Shlemon's controversial talk on some proposed changes the AP act. In a new twist we had the whole presentation taped live for future viewing and many thanks to Rick Curtis for his hard work putting the production together. I was very pleased to see the number of professionals make the effort to get out, support our IE Chapter and based on Dr. Shlemon's talk, begin to question the effectiveness or intent of some of our current geologic laws. The student presence is always a benefit as well. Thanks as always to Cal State San Bernardino for their continuing support and interest!



Dr. Roy Shlemon

Our first meeting of the new AEG year was certainly a success after taking this past summer off. With a strong and experienced board of officers you should expect continued successes. I fully

understand it can be difficult to find the extra time to attend professional meetings and technical events, even more so based on our local economy over the past several years, but as professionals and leaders in our industry it is a part of our responsibility to carry our practice forward into the future. As registered professionals, if we can't find the time to get involved in our community who will? The Chapter's promise to you is to provide interesting speakers, topics and other events to support your ongoing education on a monthly basis. I hope all of you will continue to find the time and make the effort, as so many of you did this past month, to continue to grow our Chapter and be a model for other local professional organizations to emulate.

Our upcoming presentation on November 14 will be held a week earlier due to the quickly approaching Thanksgiving holiday. It's hard to believe we are approaching the end of another year! We will be meeting again about two weeks from now and in the spirit of covering all aspects of both engineering and environmental geology will we host Mr. Jim Larwood, CEG with AECOM who

will be presenting on deep aquifer remediation with site specific lessons in the Santa Clarita valley. I'm calling out to all the environmental geologists who we don't get to see very often.

We will also be hosting a December meeting this year in Rancho Cucamonga and are pleased to present Dr. Doug Yule with Cal State Northridge and his latest work on the San Andreas Fault in the San Gorgonio Pass area. In January we will be back in the Temecula area and our guest speaker will be Dr. Miles Kenny, consultant, and some of his recent work in the Beverly Hills area.

See you all in Temecula on November 14!

Best regards,

Douglas Johnston,
Chair, AEG Inland Empire Chapter



Characterization and Remediation of Deep Multi-Aquifer Systems Critical and Innovative Planning Strategies

ABSTRACT

Successful remediation of an impacted multi-aquifer system requires a comprehensive understanding of the aquifer architecture and its characteristics. A multi-prong and innovative strategy was designed and implemented for characterizing the deep aquifer system and remedial planning. The strategy included: 1) use of Environmental Sequence Stratigraphy (ESS) for understanding the subsurface stratigraphy based on existing site data, 2) development of a preliminary Conceptual Aquifer System Model (CASM) based on the ESS; 3) design and installation of wells (piezometers, monitoring wells, and extraction wells) to refine the CASM; 4) conducting pump tests at strategic locations to better understand the multi-aquifer characteristics and to further refine the CASM; and 5) development of a three dimensional (3-D) geologic framework model (GFM) of the aquifer system by combining the results of the ESSSM and CASM evaluations with the aquifer test data, groundwater analytical data, boring and geophysical logs (elogs), and overall observations during the well installations. The 3-D GFM was used as input for numerical groundwater flow and transport modeling purposes.

Characterization of deep impacted multi-aquifer systems is a challenge in itself. By developing innovative, systematic planning strategies in the initial investigative stages, a better knowledge of the deep multi-aquifer system can be achieved in a more cost-effective manner. Incorporation of

accumulated data into a well-established CASM provides for construction of a more representative site-specific numerical flow and transport model. A well-developed CASM also enables the precise design for the depth and screen intervals of the extraction wells in the impacted zones. This allows for optimal extraction strategies and significant cost efficiencies over the course of the remediation. Therefore, understanding the aquifer framework leads to more efficiency in planning and implementation of groundwater remediation in the deep aquifers at the Site.



Above: Well head with pump test equipment. (All photos by Jim Larwood).

Speaker Biography

Jim Larwood received a BS in Geology from Cal State Fullerton in 1988 and is a Professional and Certified Engineering Geologist in California.

For the past 24 years, Jim's experience covers a broad spectrum of environmental, geotechnical and hydrogeological consulting on projects throughout California including manufactured gas plant characterization and remediation, landslide stabilization, as well as a wide variety of residential, commercial and capital improvement projects.

Jim's recent hydrogeological work involves the characterization of deep multi-aquifer systems which is the subject of this talk.

Below: Completed extraction well with piezometers in the background.



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The AEG Inland Empire Chapter *Newsletter* is a monthly publication of the Inland Empire Chapter of the Southern California Section, Association of Environmental and Engineering Geologists. For more information visit the Chapter website:
<http://www.aegsc.org/chapters/inlandempire>.

Submittals: Deadline, 28th of the month. Employment notices, job position announcements, and advertisements can be posted for a minimal fee. *Newsletter* circulation about 170 in greater inland areas of Southern California, and elsewhere.

E-Mail Address changes:
aeginland@gmail.com

AEG-IE November Meeting Details

Date & Time

November 14 (Wednesday)

Social hour 5:30 to 6:30,
Dinner 6:30 to 7:30
Announcements 7:30 to 7:45
Talk and Q&A 7:45 to 8:45

Location

Marie Callender's, Temecula
29363 Rancho California Rd., Temecula, CA

Directions

Exit the I-15 at Rancho California Road, head east and take right at Ynez Rd – the first light. The restaurant is on southwest corner of the Rancho California and Ynez intersection.

Meal

Buffet style with two options: 1) Chicken broccoli pasta alfredo; or
2) Home Style Meatloaf & Gravy.

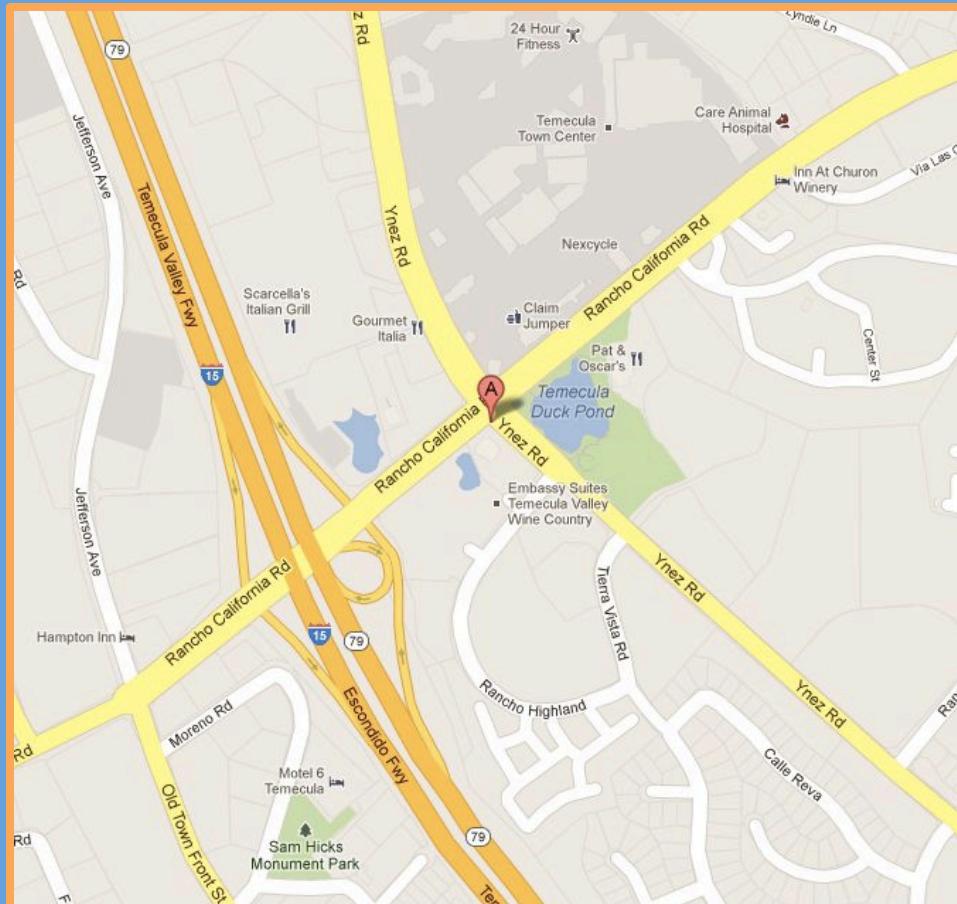
All meals come with Caesar salad, Mashed Potatoes, Seasonal Vegetables, Cornbread, and drink (fountain drink, iced tea, or coffee) and a slice of pie (Apple, Chocolate Cream, or Lemon Meringue).

Cost

\$27 for AEG members, \$30 for non-members, and \$10 per student

RSVP

aeginland@gmail.com **Deadline is Friday November 9, 2012**



OTHER MEETINGS

Joint Meeting AEG-Southern California Section

<http://www.aegsc.org/>
AND

ASCE: (*Los Angeles Section Geotechnical Engineering Group*)
www.ascelassection.org
November 14, 2012 (Wednesday).
Topic **Joyner Lecture** entitled
“Building Near Faults”.
Speaker: **Jonathan Bray**, Ph.D.,
U.C. Berkeley. Location: Stevens
Steak House, Commerce



ASCE: (*San Bernardino/Riverside Group*) November 8, 2012 Thursday - lunch meeting.
Joint meeting with APWA (American Public Works Association). Speaker: **Dr. Raymond W. Wolf**, Executive Director, San Bernardino Associated Governments (SANBAG). Topic: **“SANBAG Programs.”** For more info visit: <http://www.asce-sbriv.org/index.html>

GRA: November 7, 2012 (Wednesday). **Topic:** Short course series on Groundwater Contaminants, **“Investigation and Remediation of Dry Cleaner Release Sites.”** **Location:** Concordia, CA. For more info visit: <http://www.grac.org/>

IGS: November 7, 2012 (Wednesday). Topic: **“Color and Light in Nature.”** Speaker: **Dr. David Lynch**, USGS-Pasadena. THIS WILL BE A GREAT TALK TO BRING SPOUSES, CHILDREN AND GRAND-CHILDREN. For more info visit <http://www.inlandgeo.org/>.

LABGS: November 25, 2012. **Topic & Speaker:** **TBD.** For more info visit: <http://www.labgs.org/>

SCGS: November 12, 2012 (Monday). Topic: **“Annual Poster Session.”** **Come and see what Students and Professors have been working on.** Location: 7 Hutton Center Drive, Santa Ana, CA. For more info about SCGS visit: <http://www.southcoastgeo.org/>.

SDAG & EERI Joint Meeting: November 14, 2012 (Wednesday). Topic: **“TBD.”** Speaker: **Dr. Tara C. Hutchinson**, Department of Structural Engineering, UCSD
For more information visit the SDAG site at: <http://www.sandiegogeologists.org/>

ANNOUNCEMENTS

Naturally Occurring Asbestos Symposium (NOA)

The AEG San Francisco and AEG Sacramento Sections are planning a symposium **“Assessment, Monitoring and Mitigation of Naturally Occurring Asbestos (NOA) Hazards in the Western U.S.”** The symposium will be held on December 6, 2012 in Oakland, California at the Oakland Convention Center. See the attached flyer.

Naturally Occurring Asbestos assessment and mitigation has become an issue of great interest in the past ten years. A diverse group of speakers has been assembled from the West Coast (California, Washington, Alaska), and as far away as South Korea. If you are interested in a discussion of the latest issues, regulations, laboratory methods, and mitigation measures for NOA, this symposium is not to be missed. For additional information and to sign up, visit our event website: www.aegsf.org/NOA2012. For questions contact: Sarah Kalika, Vice Chair, AEG San Francisco Section, (925) 988-9500, Ext. 14, skalika@cornerstoneearth.com

Google Earth Database From Desert Research Institute

Dr. Kenneth D. Adams, Associate Research Professor with the Desert Research Institute in Reno, Nevada sent this note to inform everyone of their new data base.

Dear Friends and Colleagues,

I am pleased to announce the “official” launching of the Great Basin Paleo-environmental Database, which is a collection of paleo-environmental literature (broadly defined) focused on the Great Basin of the western U.S. and covering the period from about 30 kya to the present. The database is viewable in Google earth and shows which studies have been conducted where and by whom. Each record consists of the full reference and abstract (if available) for a publication. The database currently contains almost 800 entries and can be downloaded as a KML file from: <http://www.dri.edu/gbped>

Rock Mechanics Short Course

Professor Pinnaduwa Kulatilake (Director, Rock Mass Modeling and Computational Rock Mechanics Laboratories), University of Arizona, Tucson, AZ, is planning to teach the short courses mentioned below in Tucson, Arizona during the period December 3-9, 2012 as follows:

1. ROCK FRACTURE GEOMETRY CHARACTERIZATION AND NETWORK MODELING IN 3-D INCLUDING VALIDATIONS, December 3-4, 2012.
2. Measurement and Quantification of Joint Roughness, Normal Deformation, Peak Shear Strength, Aperture and Fluid Flow through Single Joints, December 5, 2012.
3. Rock Slope Stability Analyses, December 6-7, 2012.
4. Block Theory & Applications for Surficial and Underground Rock Excavations, December 8-9, 2012.

If you have interest on the short courses, please send an e-mail to:
kulatila@u.arizona.edu to receive the short course brochures.



The Association of Environmental & Engineering Geologists (AEG)
San Francisco & Sacramento Sections
Announce a Special Joint Meeting/Symposium

***Assessment, Monitoring and Mitigation of Naturally Occurring
Asbestos (NOA) Hazards in the Western U.S.***

**A one day series of talks to be held December 6th, 2012, 8AM-6PM
at the Oakland Convention Center, 1001 Broadway, Oakland, CA**

Presenter Organizations

Aeolus, Inc.	Kleinfelder
Asbestos TEM Laboratories	Kuma Corp.
Bay Area Air Quality Management District	Lab/Cor
California Air Resources Board	Lake County Air Quality Management District
California Dept. of Toxic Substances Control	Nortech Consultants
Chonnam National University, Republic of Korea	Nossaman LLP Attorneys-At-Law
Cornerstone Earth Group	Pacific Gas & Electric Company
Dragados-Flatiron-Sukut JV	Sespe Consulting
El Dorado Air Quality Management District	University of Alaska, Fairbanks
Entek Consulting Group	URS Corporation
GeoCon Consultants	

Who Should Attend

Asbestos Consultants	Geotechnical Engineers
Certified Industrial Hygienists*	Government Regulators
Environmental Consultants	Risk Assessors
Geologists	Testing Laboratories

**Note to CIHs – it is expected that this session will be worth 1 CM credit*

Cost to attend (*includes box lunch*):

If registered by Nov 15th: AEG Member - \$175, Non-Member - \$195

After Nov 15th: AEG Member - \$225, Non-Member - \$250

To get the latest meeting information, or to register to attend, visit the conference webpages at

www.aegsf.org/NOA2012

Meeting co-chairs:

Mark Bailey, PG – Asbestos TEM Labs e-mail: mark@asbestostemlabs.com

Bradley Erskine PhD, CEG, CHG – Kleinfelder e-mail: berskine@kleinfelder.com



Asbestos TEM Laboratories, Inc.

Corporate Sponsors:



AEG NOA Meeting/Symposium: "Assessment, Monitoring and Mitigation of Naturally Occurring Asbestos (NOA) Hazards in the Western U.S."

LIST OF TALKS

Bailey, Mark, PG, Regulated and Unregulated Fibrous Amphiboles of the Franciscan Formation Found in the Greater San Francisco Bay Area, President, Asbestos TEM Labs

Bailey¹, Mark, PG, Martin², Carl, Suess³, Tom, Evaluation of 3-D Turbula Mixing Coupled with Focused Subsampling as a Method to Obtain Representative Laboratory Subsamples for Analysis when Performing the CARB 435 Test Protocol, Asbestos TEM Labs, ¹ – President, ² – Geological Technician, ³ – Quality Assurance Manager

Berman, Wayne, PhD, The Performance of Available Approaches for Quantifying Airborne Exposure to Asbestos Generated from Natural Deposits, President, Aeolus, Inc.

Beall, Rick, CIH, CSP, History of Naturally Occurring Asbestos (NOA) Issues in California in El Dorado County in 1998, President, Entek Consulting Group

Bieber, Dave, CEG, PGP, CHG, Addressing Naturally Occurring Asbestos in the Mining Industry, Senior Geologist & Geological Services Manager, Geocon Consultants

Erskine, Bradley, PhD, PG, CEG, CHG, CAC, NOA at the Calaveras Dam Replacement Project (CDRP) – Part I - Challenges and Solutions; Part 2 - Applying Amphibole Speciation to Determine Asbestos Emission Source, Area Manager, Kleinfelder

Gearhart¹, Douglas, Ley², Frank, Proactive Regulation Reduces Asbestos Exposures in Lake County, CA, Lake County Air Quality Management District (LCAQMD), ¹ - Air Pollution Control Officer, ² - Air Quality Technician

Hargesheimer¹, John, PE, CIH, CSBA, DEE, Perkins², Robert, PhD, PE, Alaska, Naturally Occurring Asbestos: Experiences, Policy and 2012 Limitation of Liability Legislation, ¹ - Principal In Charge, Nortech Consultants, ² - Assoc. Professor of Civil & Environmental Engineering, University of Alaska, Fairbanks

Harnish¹, David, Saur², Robert, Cavanaugh³, John, Ludlum⁴, Don, Kendall⁵, Kevin, Virdee⁶, Avtar, Managing for Successful Control of Naturally Occurring Asbestos During Large Scale Grading, ¹ – Mgr., Envir. Remediation (PG&E), ² - Sr. Remediation Project Mgr. (PG&E), ³ – Managing Partner (ERM-West), ⁴ – Construction Mgr. (ERM-West), ⁵ – Construction Mgr., ⁶ – Environmental Compliance Mgr., Principal (ASV & Assoc.)

Harris, John, MPH, Observations from TEM Analysis of Swift Creek Samples, President, Lab/Cor

Hernandez, Dan, CIH, Estimating NOA Health Risks from Selected Construction Activities at the Calaveras Dam Replacement Project (CDRP), NOA Supervisor, Dragados Flatiron Sukut JV.

Ippolito¹, James, Bauman², J. & Kawamoto³, Carol, PE, Outdoor Air Scrubbing – Back to Basics: Fundamental Science Applied to NOA Mitigation, Kuma Corp., ¹ – President, ² – Principal, ³ – Sr. Project manager

Kalika, Sarah, PG, CAC, Evaluation of the Varying Naturally Occurring Asbestos Mitigation Measures at School and Commercial Construction Projects in California, Sr. Project Geologist, Cornerstone Earth Group

Malinowski, Mark, PG, California Dept. of Toxic Substances Control (DTSC) Update of the Schools Naturally Occurring Asbestos Guidance, Branch Chief, DTSC

Melious, Jean, J.D., Naturally Occurring Asbestos in Washington State: Swift Creek at the Intersection of Science, Law, and Risk Perception, Attorney at Law, Environment and Land Use, Nossaman LLP

Neumann¹, Rebecca, PhD, PG, Wright², Jeff, The Importance of Sample Processing in Analysis of Asbestos Content in Rocks and Soils, California Air Resources Board ¹ - Air Pollution Specialist, ² - Air Resources Supervisor,

Rohr, Maya, Case Studies that Illustrate the Importance of an Accurate NOA Study in the Air Permitting and CEQA Review Process for Aggregate Mining Projects, Project Manager, Sespe Consulting

Shin¹, Eun-Hea, Roh², Yul, PhD, Mineralogical Characteristics of Carbonate Rock-Hosted Naturally Occurring Asbestos, Earth Systems & Environmental Sciences, Chonnam National Univ., ¹ – Grad. Student, ² – Assoc. Professor

Thomas, Candice, El Dorado Air Quality Management District's (EDAQMD) Approach to Dealing with Naturally Occurring Asbestos (NOA) Hazards, Senior Air Quality Specialist, EDAQMD

Wall, Mike, Bay Area Air Quality Management District (BAAQMD) Naturally Occurring Asbestos Regulations and Enforcement Protocols, Supervising Air Quality Specialist, Compliance & Enforcement Division, BAAQMD

Zdeb, Thomas, PG, CIH, Essential Components of a Perimeter Air Monitoring Plan and Worker Protection Program at Sites Involving the Excavation of Naturally Occurring Asbestos, Senior Scientist, URS Corp

To view talk abstracts go to <http://aegsf.org/NOA2012/presenters-and-abstracts/>



Deborah Koop, Steve Bell, Judy Kramer, Jeff Young

Anza-Borrego Desert Research Symposium CALL FOR PAPERS

Anza-Borrego Foundation invites you to submit abstracts for oral or poster presentation at the Anza-Borrego Desert Research Symposium, November 2-4, 2012.

Anza-Borrego Foundation's symposium planning committee requests presentations on current original research in archaeology, botany, ecology, geology, history, paleontology, wildlife, climate change, economic value of intact desert lands, and other environmental issues.

The symposium will provide an opportunity for students, scientists and the general public to come together to celebrate the diversity and excellence of research taking place in Anza-Borrego Desert State Park. Posters will be featured during the Friday evening welcome reception.

Submit abstracts by 8-15-2012. Send your abstract to info@theabf.org as a word document attachment. Please limit submissions to a single page. The number of presentations may be restricted. Abstracts will be reviewed and authors will be notified of acceptance by 8-31-2012. Please direct questions to info@theabf.org.

Friday, November 2
Welcome Reception & Poster Presentations,
Steele/Burnand Anza-Borrego Desert Research Center

Saturday, November 3
Oral Presentations,
Steele/Burnand Anza-Borrego Desert Research Center

Sunday, November 4
Field Tours,
Anza-Borrego Desert State Park



The event is presented in partnership with
Anza-Borrego Desert State Park.

Anza-Borrego Desert Research



South Coast Geological Society Poster Session

Call for Presenters

To be held:

Monday, November 12, 2012

Location:

Doubletree Club
7 Hutton Centre Drive
Santa Ana, CA 92707



Greetings!

Due to a schedule conflict with the GSA Meeting, the South Coast Geological Society will be holding our annual poster session on **Monday, November 12th** at our regular meeting location in Santa Ana, the Doubletree Club. All are encouraged to create a poster to share with the group. Posters in the past have focused on proposed work, completed research and sometimes good old fashioned show and tell!

Please submit your poster title and a brief abstract (3-5 sentences) by October 15 so that we can create a program for our November newsletter.

For those that have not participated before, we find that this session is good practice for those with thesis projects that are almost done, a great way to get feedback from a variety of professionals, and a good opportunity to see some of what's going on in the "real world." The information for your poster can be sent to me at ajack_gss@msn.com. We anticipate awarding a few prizes based on member polling.

Thank you,
Sandy Jack, SCGS Secretary