



Association of Environmental and Engineering Geologists
California Central Coast Chapter, Southern California Section

www.aegsc.org/chapters/centralcoast

Robert J. Urban, President
William "Bill" Tracy, Vice President

Diane Love, Treasurer
Else Wolff, Secretary

MAY 2006 MEETING NOTICE

IN-SITU ENHANCED BIOREMEDIATION OF FREON 11/FREON 113 GROUNDWATER CONTAMINATION USING HYDROGEN RELEASE COMPOUND

Wednesday, May 31, 2006

Rusty's Pizza, Goleta

(RSVP/Directions below)

6:00 pm- 7:00 pm Social Hour
7:00 pm – 8:00 pm Chapter Meeting

The May meeting is sponsored by:



TETRA TECH, INC.

Speaker:

Mr. James R. Steele, P.G., C.E.G., C.Hg.

Speakers' Brief Biography:

Mr. Steele is a professional geologist with over 18 years experience performing multidisciplinary projects involving hydrogeologic assessment, environmental assessment and remediation, and engineering geology. His credentials include:

- A B.A in Geological Sciences and Geography from the University of California Santa Barbara;
- A Certificate in Hazardous Material Management from the University of California Santa Barbara University Extension; and
- A California Professional Geologist license with certificates in engineering geology and hydrogeology.

Mr. Steele is currently a Principal at Tetra Tech, Inc. His areas of expertise include geotechnical

engineering, geohazard analysis, landfill operations, landfill closure/post closure monitoring, environmental site assessments, hydrogeologic studies, and environmental assessment and remediation projects. Mr. Steele has developed and implemented numerous environmental remediation projects for soil and groundwater contamination problems utilizing a wide variety of techniques, including excavation and disposal, land farming, groundwater extraction/treatment, vapor extraction, air sparging, hydrologic barriers, chemical oxidation, and augmented bioremediation. Most recently he has been involved in the development and implementation of *in-situ* groundwater remediation projects for fuel and chlorinated solvent groundwater contamination using enhanced natural attenuation techniques to stimulate indigenous microbial degraders and chemical oxidation techniques.

Abstract

In-Situ Enhanced Bioremediation of Freon 11/Freon 113 Groundwater Contamination Using Hydrogen Release Compound

James R. Steele, P.G., C.E.G., C.Hg.

Chemicals used in the illegal manufacturing of drugs are creating an increasing legacy of solvent contaminated sites. Each year the number of illegal drug labs increases significantly, each using dangerous solvents in the manufacturing process and disposing of the spent solvents illegally. Tetra-Tech as leader in environmental assessment and remediation teamed with the San Luis Obispo Regional Water Quality Control Board and Regenesis to design and implement a remedial response to high levels of Freon 11/Freon 113 in groundwater at a former illegal drug lab site. The Site provided challenges in both assessment and remedial design due to the presence of multiple sources and very difficult rural working terrain. Regenesis' hydrogen release compound (HRC) has been shown to be effective in treatment of a mixed Freon 11/Freon 113 plume in previous studies and provided a cost effective remedial alternative which could be implemented in the rough rural terrain.

Conventional active remediation methodologies for chlorinated hydrocarbon groundwater contamination, such as pump and treat technologies, can be costly and often require long term operation. In addition, active treatment methodologies can be difficult to implement at sites with sensitive natural resources constraints, where seasonal conditions may damage or compromise operation of remediation equipment, or where remediation equipment operation may conflict with site operations. Using HRC to enhance *in situ* anaerobic biodegradation of chlorinated hydrocarbon groundwater contamination offers a comparatively simple, and cost effective remediation alternative that can be implemented with minimal impact to natural resources or conflict with site operations. Because the HRC process does not require equipment operation, there are no associated equipment operation costs, there is no need to consider the effect of seasonal constraints such as weather conditions or flooding on equipment operation, and the site area is not impacted by long term operation of remediation equipment.

HRC is a proprietary polylactate ester that upon being released into the subsurface, slowly releases lactic acid. The lactic acid is slowly metabolized by naturally occurring microorganisms, resulting in the creation of anaerobic aquifer conditions and the production of hydrogen. Naturally occurring microorganisms capable of reductive dechlorination then use the hydrogen to progressively remove chlorine atoms from chlorinated hydrocarbon contaminants.

Results for a case study of HRC remediation at a site with Freon 11/Freon 113 groundwater contamination from an illicit drug manufacturing operation will be presented. The site is in an area bordering an estuary in rural coastal Central California where sensitive habitat and seasonal constrains (weather conditions and flooding) preclude using conventional pump and treat methodologies. The case study summary includes a benefit-cost data analysis for the project.

Chapter President Message

Greetings CA Central Coast Chapter:

I am pleased to announce that our last month's meeting, our Chapter's First Annual Student Night, was a successful meeting attended by a number of students and professionals. Mr. Garret Bean and Ms. Jeni McDermott, students of UC Santa Barbara, presented research conducted as part of their master's degree programs. Both presentations were well delivered by the presenters and well received by the audience.

Our Chapter's first recipient of the Dr. John W. Williams Scholarship was Ms. Jeni McDermott. Voted to receive the scholarship by the attendees of the April meeting, Ms. McDermott received a scholarship amount of \$500. Ms. Dermott is planning to continue her education and attend a doctorate program in the geological sciences. Congratulations and best of wishes to your future endeavors, Jeni!

The new Association of Environmental & Engineering Geologists (AEG) website is up and running. Check out the new website at: <http://aegweb.org/i4a/pages/index.cfm?pageid=1>

I have some unfortunate news for our Chapter. After a year of excellent service, Ms. Diane Love will be leaving our Chapter for pursuits in Arizona. Diane has served as our Chapter's Treasurer and has helped establish our Chapter by providing excellent financial accounting for the Chapter. She will be greatly missed and we wish her the best in Arizona. We hope to see her at an Annual Meeting!

Because of Diane Love's departure, the Chapter is currently seeking a replacement for Treasurer until the September elections. If you would like to volunteer, please contact me as soon as possible.

I look forward to seeing at the upcoming meeting!

*Best of regards,
Robert J. Urban
President
AEG CA Central Coast Chapter*

Announcements

Please email announcements to lavapoet@verizon.net, thank you.

First Annual North American Landslide Conference, Vail, CO

The Conference will hold four days of technical sessions on Monday and Tuesday, June 4-5, 2007, and on Thursday and Friday, June 7-8, 2007. Wednesday, June 6, 2007, will be devoted to 1-day **Technical Excursions** that are included within the registration fees.

The technical program is designed to address the **Conference Themes**, which include **13 Principal Topics**.

The Technical Program will consist of plenary sessions in the mornings and multiple parallel technical sessions in the afternoons. The morning sessions will contain Keynote and Invited Addresses, supplemented in some cases by debates or panel discussions. A total of 15-20 individual addresses are planned. The afternoon technical sessions will accommodate 125-150 presentations. Additional presentations will be accommodated as posters – these will be presented for review and debate during morning and afternoon breaks and luncheons.

SUMMER 2006 REVIEW COURSES for the ASBOG GEOLOGY LICENSING EXAM

The Association of Engineering Geologists is pleased to announce the Summer 2006 series of review courses for the ASBOG geology licensing exam taught by REG Review, Inc.

AEG and REG Review, Inc. have partnered to provide these courses since 1992. In the Summer of 2006, review courses will be offered in Madison, WI, St Louis, MO, Denver, CO, Pittsburgh, PA, Raleigh, NC, Manchester, NH, Seattle, WA, and 2 locations in California (Corona and Oakland). We have also reinstated the CEG and CHG courses in California and these are to be held in Santa Ana, CA.

Summer 2006 course dates and locations are as follows:

LOCATIONS - Summer 2006

Central US ASBOG Courses - (2006NCUS-2, 2006CUS-1, 2006CWUS-2)

2006NCUS-2 Madison, WI
Best Western East Towne Suites
4801 Anamark Drive, Madison WI 53704
608-244-2020
DATE - July 7, 2006, 8am - 4pm

2006CUS-1 St Louis, MO
St Louis Airport Hotel
10232 Natural Bridge Road, St Louis MO 63134
314-427-5955
DATE - July 8, 2006, 8am - 4pm

2006CWUS-2 Denver, CO
Comfort Suites - DIA
6210 Tower Road, Denver CO 80249
303-371-8173
DATE - July 9, 2006, 8am - 4pm

Eastern US ASBOG Courses - (2006NEUS-1, 2006NEUS-2, 2006CEUS-2)

2006NEUS-1 Pittsburgh, PA
Best Western Parkway Center Inn
875 Greentree Road, Pittsburgh PA 15220
412-922-7070
DATE - July 13, 2006, 8am - 4pm

2006CEUS-2 Raleigh, NC
Best Western Cary Inn
1722 Walnut Street, Cary NC 27511
919-481-1200
DATE - July 14, 2006, 8am - 4pm

2006NEUS-2 Manchester, NH
The Derryfield School
2108 River Road, Manchester NH 03104
603-472-3050
DATE - July 15, 2006, 8am - 4pm

West Coast ASBOG Courses (2006SC-3, 2006NC-3, 2006PNW-2)

2006PNW-2 Seattle, WA
Best Western Airport Executiel
20717 International Boulevard, Seattle WA 98198

206-878-3300
DATE - July 27, 2006, 8am - 4pm

2006NC-3 Oakland CA
Samuel Merritt College - Health Education Center
400 Hawthorne Avenue, Oakland, CA 94609
510-869-6161
DATE - July 28, 2006, 8am - 4pm

2006SC-3 Southern CA
Best Western Kings Inn
1084 Pomona Road, Corona CA 92882
951-734-4241
DATE - July 29, 2006, 8am - 4pm

Reinstated Hydrogeology (CHG) and Engineering Geology (CEG) Certification Exam Courses

2006CEG-1 Santa Ana CA
Best Western Orange County Airport North
2700 Hotel Terrace, Santa Ana, CA 92705
714-432-8888
DATE - July 30, 2006, 8am - 12 noon

2006CHG-1 Santa Ana CA
Best Western Orange County Airport North
2700 Hotel Terrace, Santa Ana, CA 92705
714-432-8888
DATE - July 30, 2006, 1pm - 5pm

California Courses are \$450 for AEG members, \$465 for nonmembers.
ASBOG Courses are \$400 for AEG members, \$415 for nonmembers.

Preregistration deadline for the Winter 2006 courses is December 15, 2005 for California courses and December 22, 2005 for all other courses.

REG Review, Inc. has been teaching these courses in California since 1985. In March 2000, we began to direct our teaching towards the ASBOG geology licensing exam. The pass rate for students in classes since converting to the ASBOG course has ranged from 85 to 99%. The courses are taught by Patti Sutch, California RG 3949, CEG1641, and CHG 25, and Lisa Dirth, California RG 3951, CEG 1240, and North Carolina RG by ASBOG exam.

Current information on study manuals, flash cards, and courses may be found online on REG REVIEW, Inc's website at <http://regreview.com/>

To contact REG REVIEW Inc.:
e-mail - regreview@aol.com,

mailing address - 37 Rosewell Road, Bedford,
NH 03110,
telephone - East Coast call Lisa Dirth at 603-
472-3050, (fax) 603-471-1969.
West Coast (evenings) Patti Sutch at 916-456-
4870.

AEG
CA Central Coast Chapter
Dr. John W. Williams
Scholarship

The CA Central Coast Chapter is currently seeking donations for the Dr. John W. Williams Scholarship fund. This scholarship is awarded to deserving students pursuing education and careers in fields directly applicable to environmental and engineering geology. This scholarship provides awareness of the contributions Dr. Williams to the profession of engineering geology and awareness of AEG in the development of our profession.

2006 List of Donors

Platinum
(\$1,000 and up)

Dr. John W. Williams

Gold
(\$500 and up)

-

Silver
(\$100 and up)

Ms. Diane Love

TetraTech, Inc.

Mr. and Mrs. Robert J. Urban

Bronze

To make a donation to the Dr. John W. Williams Scholarship fund, please contact Robert Urban at robert_urban@urscorp.com. All scholarship donors will be recognized on our Chapter's

newsletter and website.

Last Month's Meeting

Our April – First Annual Student Night meeting featured Mr. Garret Bean and Ms. Jeni McDermott. Both Mr. Bean and Ms. McDermott are graduate students at UC Santa Barbara and working towards completing Master's degrees. Mr. Bean presented research of the geologic controls on river channel morphology and habitat for trout. Ms. McDermott presented research into groundwater residence times and flow paths utilizing tracer experiments with tritium/³HE.

As voted by the April meeting attendees, Ms. McDermott received the Dr. John W. Williams Scholarship. The amount of the scholarship is five hundred dollars.

Both Mr. Bean and Ms. McDermott were awarded annual memberships to AEG for delivering presentations to our Chapter.

Chapter Sponsors



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Santa Barbara, CA 93117
805.964.6010



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4213 State Street, Suite 100

Santa Barbara, CA 93110

Phone: 805.681.3100

FAX: 805.681.3108

The Association of Environmental & Engineering Geologists CA Central Coast Chapter is currently seeking monthly meeting sponsorship. Benefits of becoming a monthly meeting sponsor include: 1) sponsor's name or logo placed on our Chapter website indicating the month of sponsorship, 2) listing as a Corporate Sponsor in our monthly newsletter, and 3) recognition at the monthly meeting. Our Chapter is asking for a donation of \$150 for becoming a monthly meeting sponsor . . . a small price for the recognition that you contribute to the professional society that best embodies our professional practice.

Directions to Meeting

Monthly Meetings

Monthly meetings will take place on the last Wednesday of every month at Rusty's Pizza in Goleta. Social hour begins at 6 pm; the meeting begins at 7pm.

For more information or to be added to the CA Central Coast Chapter email list, please contact Robert Urban via email at robert_urban@urscorp.com.

Location:

Rusty's Pizza, 270 Storke Road, Goleta (Santa Barbara)

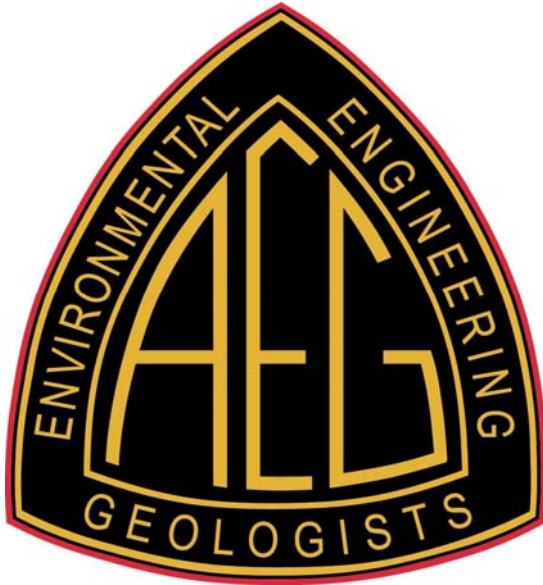
Directions:

1. Driving Northbound or Southbound on Highway 101;
2. Exit on Storke Road;
3. Turn Left (if you were traveling northbound), Right (if you were traveling southbound);
4. Turn Left at the first stoplight past Hollister Road;
5. Rusty's is on the left.

Donation/Cost:

AEG members = \$15; non-AEG members = \$20; Students = \$5

Please: If you plan on attending the meeting, please email lavapoet@verizon.net a confirmation of your attendance by the Tuesday preceding the meeting date. This greatly helps in ordering the food for attendees. However, if you forget to email, please still do attend the meeting. Thank you.



JOB POSTINGS

If you would like to place a job announcement, please email the listing to lavapoet@verizon.net, thank you!



Lawson & Associates
Geotechnical Consulting, Inc.
**Lawson & Associates Geotechnical
Consulting, Inc.**
2045 Royal Avenue, Ste. 125
Simi Valley, CA 93065
Tele: (805) 579-3434 Fax: (805) 579-3435
Email: kesmond@lgcgeo.com
Website: www.lgcgeo.com

LGC is looking for dynamic individuals to join our team and work on some of Orange, Los Angeles, Ventura, San Bernardino, Santa Barbara and Kern Counties' most interesting and technically challenging projects. If you are an experienced geotechnical professional, or just starting your career, please do not hesitate to contact us. All inquiries will be considered in the utmost confidence. We look forward to hearing from you.

Lawson and Associates looking for Project Engineer
Work under the supervision of registered geotechnical engineer to perform field geotechnical investigations, analysis and

design of shallow & deep foundation, seismic hazard assessments, liquefaction analysis, and static and pseudo-static slope stability analysis; prepare geotechnical reports; participate in inspecting existing engineering projects and formulating recommendation on project design improvements; present the engineering aspect of the project to clients and interact with clients on the technical parts of the projects.

Requirement: MS degree in Civil Engineering with specialization in Geotechnical Engineering.

Send resumes to 2045 Royal Avenue, Suite 125, Simi Valley, CA 93065



URS Corporation is seeking top students graduating this spring for career positions at our Santa Barbara and Santa Maria offices. For further information, please contact Mr. David Bernal, PG by email at:

David_Bernal@urscorp.com

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