Newsletter

Inland Empire Chapter News

Southern California Section, Association of Environmental and Engineering Geologists

Editor: Rick Gundry rick.gundry@verizon.net (951) 924-6756

June 11, 2007 (19-May-07 FINAL) Vol. 3, No.6

– – Ballot: 2007-2008 Officers – –

" Municipal Landfills and Ground-Water Contamination in southern California "

Wednesday 20-June-2007

5:00 - 6:00	Geologist Orientation	Patio/Banquet Room
6:30 - 7:15	Dinner Meeting	Banquet Room
7:30 - 8:30	Meeting Presentation	Banquet Room

Country Garden Bar and Grill, Temecula

(Meeting Cost $24, Order Selections from Banquet Menu)
(includes tax and gratuity)
(Fund-raising donation suggested is $5.00, or more)
(***RSVP/Directions below)***

Meeting Details at right (see inside)
RSVP Due by c.o.b. 14-Jun-07
e-mail or call no. above:
rick.gundry@verizon.net

Chapter Officers

Chapter President
Rick Gundry
Inland Geologic
(see above e-mail, phone no.)

Vice President North
Mike Cook
Kleinfelder Associates
(909) 557-1463
MCook@kleinfelder.com

Vice President South
Mitch Bornyasz
Leighton and Associates
(951) 252-8926
MBornyasz@leightongroup.com

Chapter Treasurer
Doug Cook
RMA Geosciences
(909) 393-9700
DCook@rmagrp.com

Secretary
David Gaddie
Riverside County
DGadie@rctlma.org

This Month's Speaker :

Dr. Jim Finegan, PG, CHG, Senior Hydrogeologist, Geosyntec Consultants, Pasadena, California

Abstract

Municipal landfills are often a source of impacts to both the vadose zone and groundwater, via migration of landfill gas (LFG) and leachate from the refuse into surrounding geologic media and aquifers. In addition, many landfills historically accepted liquid septic and other wastes ("septage") into unlined impoundments and ponds, which subsequently leaked into the subsurface. While most landfill impacts are generally assumed to be due to leachate release, landfills in the arid to semi-arid environment of Southern California are less likely to produce sufficient volumes of leachate to impact groundwater, which is also frequently deep (greater than 100 feet). Most groundwater impacts by these landfills are, in fact, due to the migration of LFG.

Studies of moisture content in soils on landfill surfaces at arid to semi-arid sites indicate that rainfall does not penetrate more than about 2 m from the surface. Thus, the liquid required to generate LFG generally comes from

the moisture intrinsic to the waste in the landfill. Because of this, LFG generation rates are often relatively low at landfills that have not accepted liquid or high-moisture wastes, and arid-region landfills can produce low levels of gas for many decades. In addition, because precipitation does not generally infiltrate into the refuse, non-prescriptive final covers for these landfills are often superior to prescriptive (e.g., clay) covers. These alternative covers, which generally comprise just several feet of permeable soil, allow the escape of LFG to the atmosphere rather than forcing it downward to groundwater while still preventing the infiltration of liquid. Prescriptive covers also have a history of catastrophic failure in arid environments due to desiccation.

In general , a groundwater impact is distinguished by concentrations of organic and/or inorganic compounds or values of parameters that are statistically higher or lower than predicted based on natural background values (or intrawell comparisons). Anthropogenic compounds are inherently indicative of impact unless evidence for laboratory or field contamination can be shown. Methods of impact evaluation consist of quantitative and qualitative analysis of groundwater chemistry and soil-pore gas data and graphical analysis. For example, the presence of volatile organic compounds (VOCs) in samples from up-hydraulic gradient groundwater monitoring wells is generally indicative of a LFG impact and not leachate, which is not expected to flow "uphill." Frequently, a reliable way to distinguish between leachate or septage and LFG impacts is simply by comparing chloride concentrations (note that TDS values can be elevated by both LFG and liquid release for different reasons) between impacted and non-impacted groundwater.

The nature of groundwater impact by direct contact with LFG is often characterized by the presence of various VOCs, including chlorinated aliphatic compounds (e.g., tetrachloroethene and daughter products) and chlorofluorocarbons (CFCs), decreased pH values, elevated bicarbonate, and altered values of other oxidation-reduction parameters. LFG may also impact groundwater via the formation of condensate and "washdown" by infiltrating water (e.g., rainfall). The chemical characteristics of these types of LFG impacts can be distinguished from each other and from impact by leachate and other liquid releases using the methods indicated above.

Biographical Sketch

Jim has a bachelor's degree in geology from Occidental College (Los Angeles) and a PhD in Hydrogeology from the University of Melbourne (Australia) where he studied groundwater flow and contaminant transport in a complex basaltic aquifer system.

Jim has over 13 years of experience in the environmental consulting and landfill management industry, and has also worked as a laboratory analyst, testing water and soil samples for organic and inorganic analytes. In the field, he has extensive drilling experience, including hollow-stem auger, ARCH, mud rotary, bucket auger, and oriented coring, and has avoided exposure to all manner of toxic chemicals while collecting and testing samples.

While working for Norcal/San Bernardino, Inc., Jim concurrently managed all environmental monitoring and investigation projects for about 25 landfills in San Bernardino County. Subsequently, he was employed as a Senior Hydrogeologist at Geo-Logic Associates where, among other things, he continued to manage landfill monitoring and investigation projects, performed percolation testing and septic-system design, and performed numerical modeling of flow and perchlorate transport for the Stringfellow Superfund Site in Riverside, California.

At Geosyntec, Jim is an expert witness (hydrogeology) in litigation cases, continues to be involved in landfill investigations and monitoring, and is part of a team installing a large-scale in-situ bioremediation system in Seal Beach, CA.

Message from the Chapter President

Election of Officers 2007-2008

We will be presenting the slate of Chapter Officer Candidates following this meeting this meeting, for the Election of Chapter Officers to be held at the July meeting. This is for Chapter Officers for the term of 1-October-2007 through 30-September-2008. This will be the last opportunity for potential candidates to enter the slate for publication following this meeting. Other candidates who are interested can be "write-in" candidates after that, up through the time the formal Election is called at the July Meeting. If you are interested, please contact an Officer Board Member prior to/or at the July Meeting before the election occurs during themeeting.

Election Ballot for 2007-2008 Chapter Officers will be sent out before the July 2007 meeting. A formal Election of Officers will be held at the July Meeting. Opportunity will be provided through e-Mail for submitting votes by eMail at the designated eMail address when the Ballot is submitted by eMail. Ballots will be available at the July meeting for those wishing to Vote then although the Vote at the meeting will be by count of hands, or to write in there names as candidates for a particular position as an Officer for 2007-2008 prior to the actual voting at that July meeting.

The Election and Election process is being conducted in accordance with the AEG Bylaws, and the Chapter Bylaws.

2-Day Short Course (w/ Field Trip)

A significant total of 41 professionals attended the short course "*Paleosiesmology and Hazard Assessmengt; Distinguishing Active Faults from Neotectonic featurers That Look Like Them (with a Field Trip to Ridgetop Spreading Zones.*" The course was led by instructor James P. McCalpin, Ph.D. GEOHAZ Consulting, Inc., Crestone, Colorado, Friday and Saturday 27/28-Apr-07. The class was held at UC-Riverside, Extension Center and the San Gabriel Mountains, and was predominantly attended by those in consulting.

Dr. McCalpin was sincerely awarded a plaque of appreciation and thanks for this informative course at the last field trip stop. (See web-site photographs.)

1-Day Continuing Education Course

Fifty-seven professionals participated in the one-day course convened Saturday 12-May-07 "*Earthquakes and Seismic Hazards"* convened at UC-Riverside Extension Center. There were six speakers and the 'provost' coordinating instructor Dr. Tien-Chang Lee, along with 50 enrolled attenders, of which all were in the consulting industry except two government employees and two students (the two students had worked already part-time in the consulting industry). We are glad students benefitted, although we would like more students to attend. This is the 6th in the Geology Continuing Education Series of quarterly continuing education courses since April 2005 that are co-sponsored by the Inland Geological Society and the AEG Inland Empire Chapter.

Course Speakers:

Dr. James H. Dieterich, UCR
Dr. Elizabeth S. Cochran, UCR
Dr. Katherine Kendrick, USGS & UCR
Dr. Douglas M. Morton USGS (Ret.) & UCR
Dr. Jerry Trieman, CGS (CDMG)
Dr. Kerry Cato, Cato Geosciences

Each speaker was awarded Inland Geological Society T-Shirts. We also expressed appreciation and thanks to Dr. Tien-Chang Lee, Professor of Geophysics and Hydrogeology, Department of Earth Sciences, University of California, Riverside, Riverside, California, for his role in coordinating the Geology Continuing Education Series of classes.

Last Call for Slate of Candidates (see at left)

Thanks

Thanks to the 33 Professionals and students attending the May Meeting at Castaway Restaurant and Banquets, San Bernardino:

John Moylan, independent consultant, Distinguished Lecturer in Engineering Geology; **Dr. Jeff Keaton**, MACTEC; **Rick Gundry**, Inland Geologic; **Mark Spykerman**, Earth Systems, Southwest; **Doug Cook**, RMA Geosciences; **Emma Briton**, undergraduate, University of California, Riverside; **Halley Boatman**, University of California, Riverside; **Dr. Sally McGill**, California State University, San Bernardino; **Darren Boshart**, undergraduate, California State University, San Bernardino; **Macario Torres**, undergraduate, California State University, San Bernardino; **Debbie Kunath**, undergraduate, California State University, San Bernardino; **Shelby Harrell,** undergraduate, California State University, San Bernardino; **Vanessa Fava**, undergraduate, California State University, San Bernardino; Alonzo Poach, undergraduate, California State University, San Bernardino; **Dr. Jeffrey Marshall**, California State Polytechnic University, Pomona; **Allison Ruotolo**, undergraduate, California State Polytechnic University, Pomona; **Mr. Ruotolo**, Pomona; **Robert Ellis**, undergraduate, California Polytechnic State University, Pomona; **Mrs Robert Ellis**, Pomona; **Mike Cook**, Kleinfelder, Inc.; **Lisa Battiato**, Kleinfelder, Inc.; **Richard Orr**, Leighton Group; **Tiana Rasmussen**, Gary Rasmussen and Associates; **Gary Rasmussen**, Gary Rasmussen and Associates; **Frank Jordan**, J. R. Byerly and Associates; **Jeff Fitssimmons**, J. R. Byerly and Associates; **Mark Doerschlag**, Peak Group; **Dr. Tom Sheahan**, Geomatrix; **Rick Rees**, Geomatrix Consulting; **Jonathon Rossi**, Nevada Pacific Consulting; **Tony Morgan**, Layne Geo-Sciences COLOG Group.

Awards, Education Assistance and Outreach

Six undergraduate students representing three Universities were presented Award Letters and Checks from the AEG Inland Empire Chapter in the amount of $500.00 apiece to further academic achievement for field work, field trip, or Summer field camp costs at the May meeting, as follows:

California State Polytechnic University, Pomona
Geological Sciences Department

- Allison Ruotolo, Geology Major, undergraduate
- Robert Ellis, Geology Major, undergraduate

California State University, San Bernardino
Department of Geological Sciences

- Macario Torres, Geology Major undergraduate
- Darren Boshart, Geology Major undergraduate

University of California, Riverside
Department of Earth Sciences

- Emma Briton, Geology Major undergraduate
- Hally Boatman, Geology Major undergraduate

(Photographs at web-page, in Section web-site)

Meeting Location and Details

Location. The meeting site is located in the City of Temecula on Old Town Front Street immediately adjacent to I-15, just northwest of the HYWY 74 offramp.

Country Garden Bar and Grill
2900 Old Town Front Street
Temecula, CA 92590
(951) 695-2421

Directions to Meeting. From the I-15 freeway in City of Temecula, EXIT HYWY 74. (If north-bound, Turn LEFT and if south-bound Turn RIGHT.) Proceed west, to curve North on Old Town Front Street (west of and parallel to I-15), and immediately turn right into parking area at meeting site south of Ramada Express, at Country Garden Restaurant. (If proceeding south on the road parallel to the west of I-15, Jefferson becomes Old Town Front Street, and prior to end of roadway and I-15, turn left into parking area.). For map, see web-page:
http://www.aegsc.org/chapters/inlandempire/

Meal Menu Selection. Select items from the Dinner menu, in the range of $7 to about $27 (your actual cost will include the additional taxes and 20% gratuity (total ranging from about $11 up to $32).

Drinks extra *No Host Bar, Beer & Wine, extra.

Future Meetings

JUL Wednesday July 18, 2007, Riverside, CA
– – "Status of Alquist-Priolo Fault Studies Act (potential changes) and SMARA (mineral resources and mining- related ordinances, MRMPs, CEQA, Classification-Designation, Lead-Agency performance)
Stephen Testa, Executive Officer, California State Mining and Geology Board, Sacramento, CA

AUG Wednesday Aug20, 2007, Temecula
– – "Fecal Contamination of urban streams and beach area of Santa Barbara"
Dr. John A. Izbicki, Research Hydrologist, Water Resources Division, US Geological Survey, San Diego, CA.

SEP Mon-Fri Sep. 24-28, 2007, Los Angeles, CA
Golden Anniversary in the Golden State
50th Annual Meeting Association of Environmental and Engineering Geologists
Special Anniversary Meeting in Southern California
— AEG founded in Southern California —

OCT Weds, October 17, 2007, Temecula
– – "Riding the waves of San Andreas: Geologic and Engineering aspects of the 17 October 1989 Loma Prieta Earthquake, Santa Cruz,California"
Dr. Jeffrey Marshall, Associate Professor, California State Polytechnic University, Pomona, Pomona, California.

NOV Weds. Nov. 14, 2007, Cal State San Bernardino
CSUSB Geology Club & AEG Joint Meeting
— "Latest Pleistocene slip rate of the San Bernardino strand of the San Andreas fault"
Dr. Sally McGill, Professor of Geology, Geology Department, Cal. State Univ., San Bernardino, CA

SHORT COURSES

Geology Continuing Education Series
F-W-S 2007-2008 (to be announced)

Continuing Education Ongoing Short Course
"An Introduction to Landslides or Mass Wasting"
An Online course
AIPG Accredited (3.5 CEU's)
rgfont@geosciencedm.com,
slbishop@geosciencedm.com
www.geodm.com Robert Font, Ph.D.

AEG and IGS Seeks Candidate Speakers

The Inland Geological Society and this AEG Chapter are seeking suggestion of speakers for three focused Geology Continuing Education Series courses for Fall 2007, Winter and Spring 2008. Likely subjects include::

- Landslide analysis and evaluation
- Groundwater issues and evaluation
- Fault investigation methods and evaluation

Contact Information

Inland Empire Chapter, Section and Association

AEG Inland Empire Chapter,
P. O. Box 8944
Moreno Valley, CA 92552-8944
http://www.aegsc.org/chapters/inlandempire

AEG Southern California Section Web-site
http://www.aegsc.org/

Association of Environmental and Engineering Geologists (Headquarters)
http://www.aegweb.org

Connecting . . .

Professionals

Practice,

And the Public

AEG Inland Empire Chapter Recognizes Donors of Financial Assistance

AEG Inland Empire Chapters wishes to Honor and Thank all that provided donations to our start of a new organization and continuing.

Below the following are names of recipients and institutions of our financial contributions in education assistance to local Univeristies in the Inland Empire. Many who have donate wanted their donations to be passed on to students and educational assistance, and are honored and re-recognized below..

First are all the persons who donated incrementally with giving at our various meetings that are to numerous to account for and mention here, but we are very greatfull..

Moreover we express thanks to those who made significant donations as PETRAS SPONSORS during our inaugural year time and OROS SPONSORS subsequently since, as follows to assist us ground ourselves in a foundational beginning (as indicated in the Chapter web-page at www.aegsc.org/Inland).

Commemorating
Inaugural Year Foundation Petras Sponsors

Thank you to all who provided funds during the beginning times of the Inland Empire Chapter

"Petras" is a Latin term for a large rock edifice, monolith or massif of strength (eg., Rock of Gibralter), as different to "petros", a term for a rock or stone, something one can pick up. It can mean something like a cornerstone, such as one set for the foundation of a building – something strong and set first from which a foundation is built for a larger structure needing the strength.

GOLD PETRAS SPONSOR

- John Gregg, Gregg Drilling and Testing, Inc, Gregg In Situ, Inc, Signal Hill, California

SILVER PETRAS SPONSOR

- Roy J. Shlemon, Ph.D., Newport Beach, California

- Arlan Ruen, Ruen Drilling International, Inc., Ruen Drilling, Inc, Clark Fork, Idaho and Modesto, California

- Antony Martin, GEOVision Geophysical Services, Inc, Corona, California

- Richard R. Gundry, Agency Water Rights Hydrologist, Southern California Agency, U.S. Bureau of Indian Affairs, Riverside, California

- Joseph L. Aldearn, Regional Manager, Kleinfelder, Inland Empire, Redlands, California

PETRAS SPONSOR

- Richard L. Orr, Leighton Group Of Companies, Leighton and Associates, Inc. Rancho Cucamonga, California

- N. Thomas Sheahan, Vice President, Geomatrix Consultants Inc., Inland Empire Office, Corona, California
- Steven C. Suitt, Principal, Steven C. Suite and Associates, Canyon Lake, California
- Kerry Cato, Ph. D., President, Cato Geosciences, Inc., Temecula, California
- Jeffrey R. Keaton, Ph. D., Senior Principal Engineering Geologist, MACTEC Engineering and Consulting, Inc., Los Angeles, California
- Robert Riha, Manager, Leighton Consulting, Temecula, California
- Matt Hawley, Lawson & Associates Geotechnical Asociates, Inc., Simi Valley, California
- Glenn Borchardt, Soil Tectonics, Berkeley, California
- David L. Perry, Engineering Geologist, MACTEC Engineering and Consulting, Inc., Los Angeles, California
- David J. Gaddie, Engineering Geologist, Riverside County Planning Department, Fontana, California.

Comemorating OROS Sponsors

OROS Sponsors (Financial donors)

AEG Inland Empire Chapter is seeking Sponsors for financial assistance to support and build on existing foundations for education and outreach, scholarship assistance, and special events. We are seeking donors to expand and reach even further above the base or plane of generous Petras Sponsors, for mounting a more aggressive and purposeful contribution to society, students, and educators. Currently, we already have two OROS Sponsors, as follows:

SILVER OROS SPONSOR ($250, or more)

- Kelly Robertson, GREGG Drilling & Testing, Inc., Signal Hill, California

TITANIUM OROS SPONSOR ($100 or more)

- Richard R. Gundry, Inland Geologic, Moreno Valley, California

Oros **is a latin term like *oro* for rise or rear, as a mountain, as if lifting itself above the plain, or hill or a mount. Partly rooted in the term *adar* to expand honorably, as in great, glorious and magnificant . This is such as to build-upon and maintain the foundation provided by Petras Sponsorship already dedicated to this effort. (See web-Page regarding Petras Sponsorship.)**

We are seeking funds in amounts of $10, $25, $50 or more for OROS Sponsor. $10 OROS Sponsor; $25 Bronze OROS Sponsor; $50 Steel OROS Sponsor; $100 Titanium OROS Sponsor, $250 Silver OROS Sponsor, $500 Gold OROS Sponsor, and $1,000 Platinum OROS Sponsor. Sponsors at the Titanium or above level will have free advertizing in monthly Newsletters (must submit Logo, and company name with contact information).

Please help us in this endeavor, as we are a relatively new Chapter in a new-chartered area now, and in an area where outreach to the public, students, and educators has been direly needed in the past.

If you have any questions, please contact me. To remit a donation send payable to "AEG Inland Empire Chapter" at the address as indicated in the above letterhead.

List of AEG Inland Empire Chapter contributions of financial/education assistance 06-07

November 2006 ($2,000.00)

Allison Ruotolo, undergraduate student

Geological Science Department, California State Polytechnic University, Pomona

$250.00

Robert Ellis, undergraduate student

Geological Sciences Department, California State University Pomona

$250.00

David Mrofka, Graduate Student

Department of Earth Sciences, University of California, Riverside

$250.00

Diana Boyer, Graduate Student

Department of Earth Sciences, University of California, Riverside

$250.00

Dr. Sally McGill, Professor

Department of Geological Sciences, California State University, San Bernardino

$500.00 (3 Brunton Com-Pro Pocket Transits, for undergraduate student field work)

May 2007 ($3,000.00)

Emma Briton, undergraduate student

Department of Earth Sciences, University of California, Riverside

$500.00

Halley Boatman, undergraduate student

Department of Earth Sciences, University of California, Riverside

$500.00

Robert Ellis, undergraduate student

Geological Sciences Department, California State Polytechnic State University, Pomona

$500.00

Allison Ruotolo, undergraduate student

Geological Sciences Department, California State Polytechnic University, Pomona

$500.00

Daren Boshart, undergraduate student

Department of Geological Sciences, California State University, San Bernardino

$500.00

Macario Torres, undergraduate student

Department of Geological Sciences, California State University, San Bernardino

$500.00