



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

[www.aegsc.org/chapters/centralcoast](http://www.aegsc.org/chapters/centralcoast)

Robert J. Urban, Chapter President  
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NOVEMBER 2006 MEETING NOTICE

**TRACING RECHARGE WATER FROM  
SPREADING PONDS: INSIGHTS FROM A  
DECADE FOR STUDIES**

by

**Dr. Jordan Clark**

**Department of Earth Science  
University of California at Santa Barbara**

Wednesday, November 29, 2006

**Rusty's Pizza, Goleta**

*(RSVP/Directions below)*

6:00 pm- 7:00 pm Social Hour

7:00 pm – 8:00 pm Chapter Meeting

**Speaker:**

Jordan Clark, PhD

**Speakers' Brief Biography:**

Dr. Jordan Clark is currently an Associate Professor at the Department of Earth Science at the University of California, Santa Barbara (UCSB). Dr. Clark has also served as an Assistant Professor at UCSB, accomplished post-doctorate work with the Isotope Hydrology Group at the Lawrence Livermore National Laboratory, and has been a graduate research assistant at Columbia University. Dr. Clark has received a Bachelor of Science (1988) degree from Yale University and both

a Master of Arts (1991) and Doctoral (1995) degrees from Columbia University. Dr. Clark's research interests lie in the general field of aqueous geochemistry and center on 1) the transport of water and dissolved material in groundwater, surface waters, and the coastal ocean, 2) how flow patterns effect water chemistry and quality, 3) gas exchange across the air-water interface, 4) paleoclimate information stored in ground water aquifers, and 5) transport rates of hydrocarbons into the ocean and atmosphere associated with natural marine seepage.

## **Abstract**

### **TRACING RECHARGE WATER FROM SPREADING PONDS: INSIGHTS FROM A DECADE FOR STUDIES**

**by**

**Dr. Jordan Clark**

**University of California at Santa Barbara**

Determining hydraulic connections and travel times between recharge facilities and production wells has become increasingly important for permitting managed aquifer recharge (MAR) operations. This knowledge is critical for examining soil aquifer treatment and assessing the potential for contamination. During the last decade a number of geochemical approaches have been developed to trace the movement of recharge water. Because the volumes of spreading basins are very large, typically in excess of 1 billion liters, non-reactive tracers that can be economically introduced at a sufficient concentration to allow quantification after at least a 100:1 dilution must be used. Studies have shown that sulfur hexafluoride, boron isotopes (as borate), and isotopes of noble gases (e.g., He-3, Xe-124, and Xe-136) satisfy these conditions. Injection methods and results from six deliberate tracer experiments will be discussed highlighting the success and failures of the deliberate tracer method for estimating travel times and hydraulic connections.

## **Announcements**

**Please email announcements to [lavapoet@verizon.net](mailto:lavapoet@verizon.net), thank you.**

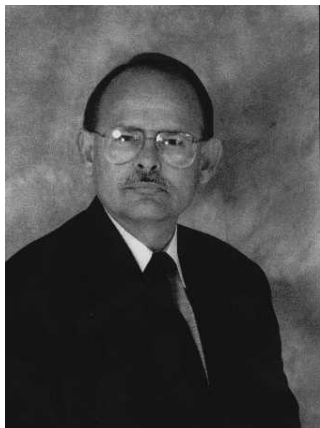
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### **Please note that next April will be our 2<sup>nd</sup> Annual Student Night.**

Student night involves two aspects of recognizing and supporting the future of our profession: (1) awarding a deserving student the Chapter's Dr. John W. Williams Scholarship and (2) listening to students present their research projects in the form of short (15 to 20 minute) presentations.

Applications for the Chapter scholarship will be posted on the Chapter website and distributed to regional universities and colleges in the near future. Last year, the scholarship was awarded in the amount of 500 dollars and may be increased this year. For further information or an application or to express your interest in delivering a presentation to the Chapter, contact the Chapter President.

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



Dr. John W. Williams is an active AEG member of the San Francisco Section, professor of engineering

geology and Department Chair at San Jose State University (1976 – present), and former AEG National President (1988), secretary, and Vice President. Dr. Williams has served as the Association of State Boards of Geology (ASBOG) President and a founding Officer and President of the Engineering Geology Foundation (1996). In addition to acting as President for a number of additional organizations, Dr. Williams has served as Chair on: the Examination Committee for the California Board of Registration for Geologists and Geophysicists (1978-2000), the Ethics Committee for the ASBOG (2002 – present), and the Examination Committee for ASBOG (2002 – present). Dr. Williams acts as the advisor to the San Francisco Section Student Chapter and has throughout his career encouraged student membership and participation in AEG.

Dr. Williams has received numerous awards over the years of service to AEG and our profession. He has received the Floyd T. Johnston Service Award (1998) from AEG and the Meritorious Service Award (1992) from the Engineering Geology Division of the Geological Society of America.

Dr. Williams earned doctorate (1970) and masters of science (1968) degrees in geology from Stanford University and a bachelors of science (1967) degree in geology from the College of William and Mary, VA. Dr. Williams is a licensed Professional Geologist, Certified Hydrogeologist, and a Certified Engineering Geologist. He began his career working for the California Division of Mines and Geology (now the California Geological Survey) from 1971 through 1976 then became a professor at San Jose State University in 1976 and has continued teaching through the present. Many consulting geologists have received mentorship from Dr. Williams and even a greater number of geologists are aware of Dr. Williams bringing attention to the importance of ethics and ethics training to geo-professionals.

The CA Central Coast Chapter recognizes the important contributions of Dr. Williams to AEG and our profession. We hope that our scholarship brings awareness of Dr. Williams' contributions to future professional geologists.

To make a donation to the Dr. John W. Williams Scholarship fund, please contact Robert Urban at [robert\\_urban@urscorp.com](mailto:robert_urban@urscorp.com). All scholarship donors will be recognized on our Chapter's website.

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## Upcoming Meetings

Interested in speaking to the Chapter?  
Inquire with the Chapter President.

Upcoming meetings include:

**December meeting** – no meeting, enjoy the holidays

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## Chapter Sponsors



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**OEC has twice sponsored a Chapter meeting, thank you OEC!**



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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**

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### **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](mailto: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

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Please: If you plan on attending the meeting, please email [lavapoet@verizon.net](mailto: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](mailto:lavapoet@verizon.net), thank you!



URS Corporation is seeking top professional geologists and graduating students 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](mailto:David.Bernal@urscorp.com)

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## **AEG CA Central Coast Chapter Contact Information**

### **Chapter President**

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### **Chapter Vice President**

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VACANT

### **Chapter Secretary**

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### **Chapter Student Liaison**

Garret Bean, Graduate Student  
Department of Geological Sciences