



March 2008

Los Angeles Basin Geological Society Newsletter

March 27, 2008 Meeting: Dr. Ken Peters of the USGS

Will speak on . . .

“Families of Monterey Crude Oil, Seep Oil, and Tarballs in Coastal California”

Speaker Synopsis / Abstract

Biomarker and stable carbon isotope ratios were used to infer the age, lithology, organic matter input, and depositional environment of the source rocks for 388 samples of produced crude oil, seep oil, and tarballs from coastal California. Results from these samples were used to construct a decision tree to classify 288 additional samples, including tarballs of unknown origin collected from Monterey and San Mateo County beaches after a storm in early 2007. Three tribes of ^{13}C -rich oil samples were identified and inferred to originate from thermally mature equivalents of the clayey-siliceous member, carbonaceous marl member, and lower calcareous-siliceous member of the Monterey Formation described at Naples Beach near Santa Barbara by Isaacs (1983). Geochemical similarities among the oil tribes and their widespread distribution support the prograding margin model (Isaacs, 2001) or the banktop-slope-basin model of Hornafius (1991) rather than the classic ridge-and-basin model (Blake, 1981) for deposition of the Monterey Formation. Tribe 1 contains four oil families having geochemical traits of clay-rich marine shale source rock deposited under suboxic conditions with substantial higher-plant input. Tribe 3 contains five oil families with traits of distal marine carbonate source rock deposited under anoxic conditions with pelagic, but little or no higher-plant input. Tribe 2 contains four oil families with intermediate traits, except for abundant 28,30-bisnorhopane, indicating suboxic to anoxic marine marl source rock with hemipelagic input. Tribes 1 and 2 occur mainly south of Point Conception in paleogeographic settings where deep burial of the Monterey source rock favored generation from

all three members or their equivalents. In this area, oil from the clayey-siliceous and carbonaceous marl members (Tribes 1 and 2) may overwhelm that from the lower calcareous-siliceous member (Tribe 3) because the latter is thinner and less oil-prone than the overlying members. Tribe 3 occurs mainly north of Point Conception, where shallow burial caused preferential generation from the underlying lower calcareous-siliceous member or another unit with similar characteristics.

Dr. Ken Peters is an expert in geochemical solutions to exploration and production problems, chemometrics for data mining, biomarkers and stable isotopes, and numerical basin modeling of petroleum systems. He is currently (1) Senior Research Geologist at the USGS in Menlo Park, where he studies Circum-Arctic petroleum systems and 3-D petroleum system models (e.g., North Slope of Alaska and San Joaquin Basin), and (2) Consulting Professor in the Department of Geology and Environmental Science at Stanford University. His experience includes 15 years with Chevron, 9 years with Mobil and ExxonMobil, and 6 years with the USGS. Ken taught corporate schools in petroleum geochemistry and basin modeling for Chevron, Mobil, and ExxonMobil, and additional courses for Oil and Gas Consultants International and at various institutions, including Stanford University and U.C. Berkeley. He served as Associate Editor for the AAPG Bulletin (1989-1994) and Organic Geochemistry (2000-present) and as Chairman of the Gordon Research Conference on Organic Geochemistry (1998), Chairman of the Organic Geochemistry Division of the Geochemical Society (2001-2004), and Chairman of the AAPG Committee for Research (2007-present). Ken has published three textbooks on petroleum geochemistry and more than 100 peer reviewed scientific papers. He is now collecting crude oil and source rock samples for a USGS geochemical study of petroleum systems in the LA Basin

**A GREAT TALK TO FIND OUT
ABOUT LA OIL, AND MORE !!!**

Meeting Time, Place, Cost and Reservations

Time:

Thursday, March 27, 2008

Typical Meeting Agenda

Lunch Served: 11:30 AM to 12:00PM
Announcements: 11:50 AM to 12:15 PM
Guest Speaker: 12:15 PM to 12:45 PM

Place:

The Grand at Willow Street Conference Center located at 4101 East Willow Street, Long Beach, CA. (562-426-0555). Take Lakewood Boulevard south from the San Diego Freeway (405), turn west onto Willow Street and turn right onto Grand Avenue at the sign for the Center. Park free in the garage structure.

Cost:

Lunch and Speaker: \$20.00 with reservations
\$25.00 without reservations
Student: FREE (Lunch and Speaker)

Meeting Reservations:

Make your reservations using our web site at www.labgs.org, by calling Marieke at (562) 624-3364., or emailing Marieke_Gaudet@Oxy.com. **Reservations must be made prior to Tuesday** before the meeting, but walk-ons are always welcome.

Upcoming 2008 Speaker/ Event Schedule

March 27, 2008 – Dr. Kenneth Peters of the USGS will talk about "*Families of Monterey Crude Oil, Seep Oil, and Tarballs in Coastal California*".

March 31 to April 2 – PSAAPG/ SPE/ SPWLA/ SEG Convention in Bakersfield, CA.

April 20 to April 23 – National AAPG Convention in San Antonio, TX.

April 24, 2008 – Dr. Joan Stock of CalTech will talk about "*Plate Tectonics and related Boundaries*"

If you have a speaker suggestion, please mention it to a Board member !!

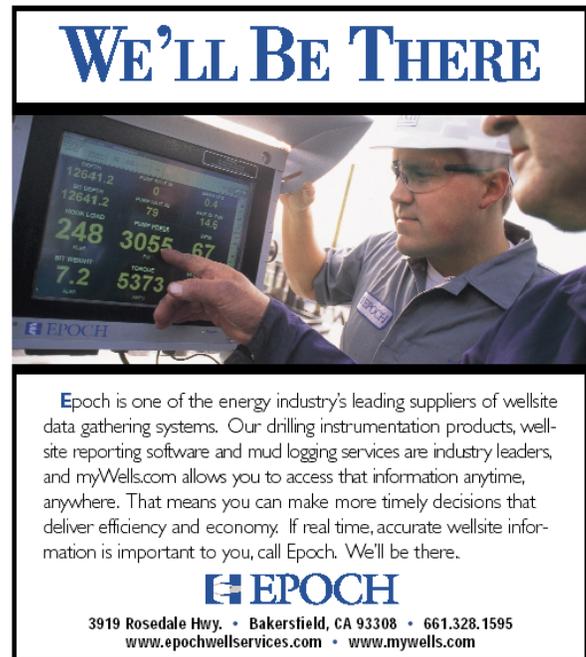
DAVID B. DEL MAR
Consulting Petroleum Geologist
California Registered Geologist #634
Development – Thermal EOR – Property Reviews

2027 Park Drive
Los Angeles, CA 90026

H (323) 664-3358
dbdelmar@earthlink.net

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Student Sponsorship

Both Halliburton and Schlumberger are defraying the cost to the Society of our students-at-the-monthly meetings program. **Students are free at all meetings.** Thank you.

The LABGS Don Clarke Award

The Don Clarke Brunton Award is given to a qualified student attending a LA Basin community college with the goal of getting an Associate degree, and enrolled with plans to pursue a baccalaureate degree in Geology or the Earth Sciences.

The Society is currently looking for a qualified applicant for the 2008 award. Check our website.

SELECTION PROCESS

The award winner is selected from candidates nominated by a faculty member at their original school. The winner is selected based on the following criteria:

- Grade point average in earth science classes.
- An enthusiastic or special recommendation from the advisor, department chair, or mentor professor

The LABGS Brunton Award

The LABGS Brunton Award is given to a qualified undergraduate student attending a four-year LA Basin College or University currently pursuing a baccalaureate degree in Geology or the Earth Sciences.

The Society is currently looking for qualified applicants for the 2008 award. Check our website.

SELECTION PROCESS

The award winner is selected from candidates nominated by a faculty member. The winner is selected based on the following criteria:

- Grade point average in earth science classes.
- An enthusiastic or special recommendation from the college advisor, department chair, or mentor professor

SEE THE WEBSITE FOR FORMS

The LABGS Field Trip

The LABGS field trip was on Sunday, March 16 to the outcrops along the coast of Orange County. Drs. Rick Behl and Mark Legg led us as we visited coastal exposures of Miocene and younger extensional faults, syn-rift sediments and intrusives (San Onofre Breccia, Monterey Formation, dacitic and andesitic dikes) and post-rift sediments (Capistrano Formation) that were deposited in the newly formed tectonic troughs. We stopped at San Onofre State Beach, Dana Point, and Laguna Beach. Pictures can be found on a following page. The weather was stupendous and most of us got a little sunburned.

We had a great time, and wish you could join us next time.

TOTY

The Teacher of the Year (TOTY) Award nominations are **NOW**. The TOTY is a \$250 award for a teacher with 3+ years experience in K-12, who teaches at least one unit per year in the natural resources.

Karla Tucker is the contact (714) 841-4546.

Please see this newsletter, or our website www.LABGS.org for more details.

LABGS Elections

It is time again for the LABGS elections. Member involvement in this process is very important. Volunteers are crucial. We need to have names of people who want to run. Please contact a Board member today. The ballot will be out in two newsletters so please respond now.

Contact Us – The LABGS Board

President: Jon Kuespert (213) 225-5900 x 224
jkuespert@breitburn.com

Program Chair: Bill Long (626)-272-4557
wlongbrd@aol.com

Treasurer: Jean Kulla (949) 500-3095
k2mobile@MSN.com

Secretary: Marieke Gaudet (562) 624-3364
marieke_gaudet@oxy.com

OUR WEB SITE ADDRESS IS:
www.labgs.org



President's Note

To all our members,

The big news was that the LABGS fieldtrip was delayed to Sunday, March 16th. We had a great trip. See the notice and pics in this newsletter.

At the February meeting Dr. Greg Holk gave us a talk on “*Stable Isotopic Clues to Fluid Pathways in Major Crustal-Scale Fault Zone*”. We had a great turnout and lots of interested listeners!

We are looking for a TOTY candidate. See the announcement in this newsletter for the Teacher-of-The-Year award (TOTY).

And LABGS Elections will be in two newsletters.

The PSAAPG Imperial Barrel Award was won by the SDSU team. They will represent the PSAAPG Section in San Antonio in the international competition.

Thanks!

Jon



Announcing
The Los Angeles Basin Geological Society
\$250 Award for
Teacher of The Year-Excellence In The Teaching Of
Natural Resources in The Earth Sciences

The Los Angeles Basin Geological Society will award \$250 in February of 2008 for Excellence in the Teaching of Natural Resources in the Earth Sciences. The winner of this award will also be eligible for consideration by the Pacific Section of the American Association of Petroleum Geologists for their award of the same name.

The award will be a \$250 certificate for the winner's use for their school or for that teacher to attend science conferences or training seminars.

Requirements:

1. Minimum of three full years full-time teaching experience at any level K-12
2. Teaching at least one unit per year on natural resources. Natural resources are defined as Earth materials used by civilizations past and present such as:
 - Inorganic substances found in the Earth such as water, mineral ores, building stone, aggregate, rocks and sediments.
 - Organic materials such as oil, gas, coal, and soil.
3. Teaching should include scientific study of these resources, for example: their origin, discovery, extraction, and/or historical and present uses. It may also include the preservation of the environment, reclamation, and/or the conservation of resources.
4. Entries will include the a brief description of the teacher's philosophy of the teaching of natural resources, a description of the unit with outline, Vita, and two letters of recommendation: one from a colleague and one from an administrator.
5. The unit will be evaluated on depth and breadth of concepts (e.g. resource origin, discovery, processing, usage, and reclamation), creativity of presentation, and balanced treatment of information regarding societal need and environmental issues.

Nominations may be made either by the teacher wishing to be considered for the award or by someone familiar with a particular teacher's performance and credentials. For further information and entry forms contact:

Los Angeles Basin Geological Society
Attn: Karla Tucker
18763 Fairfax Ln.
Huntington Beach, CA 92648
(714)841-4546
ktr2@aol.com



LABGS field trip leaders Drs. Mark Legg (l) and Rick Behl (r) giving us the big seismic picture along the bus.



Normal and antithetic faults near the Christianito fault zone related to listric normal accommodation.



Ivan Aburto (past secretary) pointing out the edge of a slide boundary of Monterey diatomite.



Dr. Bill Bilodeau – CLU enthusiastically pointing out some soft sediment deformation at Calafia State Beach.



The Christianito fault terminated by overlying terrace deposits. The San Mateo sandstone is to the left.



A group photo at Dana Point in front of San Onofre breccia. Compare this pic to the flyer photo for erosion.



Los Angeles Basin Geological Society Membership Form

Join the LABGS and become a member of the Pacific Section AAPG all for one low price of \$12.00 per year - 2 West Coast Geoscience Organizations for the price of one



Membership Benefits

- LABGS Membership
- Monthly Luncheon Meetings with Strong Technical Programs
- Pacific Section AAPG Membership
- Pacific Section AAPG Bi-Monthly Newsletter
- Discounts for PSAAPG Bookstore Publications
- Bi-Annual West Coast Geoscience Directory - *next edition 6/03*
- Networking and Social Opportunities with Fellow Geoscientists

Current Annual LABGS/PSAAPG Dues

1 Year Option = \$12.00 \$ _____
3 Year Option = \$36.00 \$ _____

Extended E-Mail Announcement List Fees

To receive meeting notices from SJGS and CGS

1 Year Option = \$12.00 \$ _____
3 Year Option = \$36.00 \$ _____

PSAAPG Foundation Contributions

B. Hacker Publication Fund \$ _____
Martin Van Couvering Fund \$ _____
Dibble Map Foundation \$ _____
California Well Sample Repository \$ _____
John Kilkenny Scholarship Fund \$ _____
PSAAPG Foundation Trust Fund \$ _____

TOTAL PAYMENT

Total Amount Enclosed \$ _____

Essential Member Information

Last Name _____
First Name _____
Middle Initial _____
E-Mail Address _____
Mail Address _____
Res or Bus ? _____

Additional Directory Information

Employer _____
Position / Title _____
Bus Phone # _____
Res Phone # _____
Fax Phone # _____
Spouse's Name _____
Education *Highest Degree* _____ *Year* _____
School _____

Signature _____

Annual membership is handled through PSAAPG and runs from July 1, through June 30. If you are already a current member of PSAAPG and you selected LABGS affiliation you are already a member of the LABGS.

**Please Make Checks out to PSAAPG and mail along with member form to:
PSAAPG P.O. Box 1072, Bakersfield, CA 93302**