



Happy New Year dear fellow SPE members!

2005, Make it a Great One!

Holidays are over. It's time to go back to life.

As we begin a new year, we have many things to be grateful for and much optimism for the future.

And when you look at the terrible devastation in Southeast Asia from the recent tsunami, it's easy to be grateful for such simple things as food, water and shelter. Please think about the possibility of doing a donation. The need is great!

SPE PETROLEUM TECHNOLOGY	LUNCHEON FORUM
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Join us Tuesday, January 11, 2005, for our Monthly Petroleum Technology Forum:

**Optimum Well Designs
For Compacting Reservoirs**

Presented by:

Dr. Mike Bruno

Terralog Technologies USA Inc.

2004/05 SPE Distinguish Lecturer

DATE: 01/11/05
REGISTRATION: 11:30 am
LUNCH; 12:00 pm
COST: \$15.00

Student Chapter members are our guests
PLACE: Long Beach Petroleum Club
3636 Linden Avenue,
Long Beach, CA 90807

Summary

The weight of sediments above an oil and gas bearing geologic formation is supported partially by the rock matrix and partially by the pressurized fluid or gas within the rock pore space. When fluid pressure is reduced, more of the load is transferred to the rock matrix and the pressure-depleted formation compacts slightly. Subsurface compaction, if it is significant or if the formation is relatively shallow, can produce measurable surface subsidence. Formation compaction can induce compression and buckling damage within the producing interval. More importantly, significant formation compaction also induces small-scale slip on bedding planes and faults within the reservoir and overburden material, causing severe shear damage to wells. Reservoir compaction and associated bedding plane slip and overburden shear has induced damage to many hundreds of wells in oil and gas fields throughout the world. Problems can be particularly acute in deep offshore operations, where individual well costs often exceed 10million dollars and specific wells often target individual sand formations or fault blocks. Hence the loss of even one or two wells may significantly impact recoverable reserves for the field.

The appropriate mitigation strategy and optimum well design will depend on the most likely location of casing damage, the expected type of damage, and the damage magnitude. This requires combining geomechanical analysis of deformations in the reservoir, overburden, and the well completion assembly, with quantitative decision analyses that compare the costs of various mitigation strategies to the economic benefit of reducing damage risk, while recognizing the inherent uncertainty and variability in each estimate or analysis.

In this presentation Dr. Bruno will describe field observations and case studies of reservoir compaction, surface subsidence, and well casing damage from around the world. He will review the state-of-the-art for analysing subsidence and well damage risks, from simple analytical equations to 3D

coupled fluid flow and geomechanical models at both the reservoir scale and wellbore scale. He will then describe mitigation strategies available to reduce well damage risks, the relative performance and damage limits for various completion designs, and quantitative decision analysis techniques that can be applied to compare the relative costs and benefits of alternative completion designs for compacting reservoirs.

Biography

Dr. Michael Bruno, President of Terralog Technologies USA, Inc., has more than 20 years experience in various aspects of reservoir and wellbore geomechanics, with more than 30 publications related to petroleum geomechanics. He has developed and applied analytical and numerical models to estimate



Michael Bruno

reservoir compaction and well damage risks, and has developed mitigation strategies and optimum well designs for oil and gas fields in the United States Canada, South America, Southeast Asia, Europe, and Eurasia. Dr. Bruno Holds a Ph.D. degree

in Civil Engineering from the University of California, Los Angeles, and is a Licensed Professional Engineer in California. Before joining Terralog in 1994, He has gained thirteen years of experience with Chevron Petroleum Technology Company, where he held the positions of Geomechanics Group Leader and Senior Research Engineer. He has a long and active record of service to the Society of Petroleum Engineers.

Dr. Bruno has served as Chairman of the Los Angeles Basin Section twice, has been a member of the Program Committee for more than half a dozen SPE Western Regional Meetings, and is currently the Review Chairman for Geomechanics and Geophysics topics for the *SPE Reservoir Evaluation and Engineering Journal*.

For more information about this and next forums, please contact the LASPE Forum Committee:

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▶ DECEMBER BOARD MEETING

REPORT
by R. Finken

A regular meeting of the LASPE Board of directors was held on December 14, 2004 at the Long Beach Petroleum Club. Thirteen Board Members, Chairpersons and guests attended. Here are the highlights:

Chairperson Raj Upadhyay reported that LASPE member Mark Shemaria has been nominated as SPE National EHS Director and that LASPE member Iraj Ershaghi has been nominated SPE national Director at Large.

The meeting's attendees discussed the pros and cons of obtaining an LASPE Visa Card to facilitate financial transactions. An alternate requiring less volunteer time and cost would be a PayPal account. After discussion, the Board approved setting up the PayPal account.

Mark Shemaria reported that Golf Tournament plans are progressing well. Representatives of BreitBurn, Tidelands and THUMS are on the committee. Mark suggested setting up a silent auction operated by the Board as an additional fundraising opportunity. This was agreed and Rick Finken volunteered to head it up.

The 2005 Western Regional Meeting will be held March 30 – April 1, 2005 at the Hyatt Regency Hotel in Irvine, CA. In addition to regular program of technical papers, Scott Hara advised that he has set up a Geology Session and a Submersible Pump workshop. Student activities include the Student Sections Paper Contest and award dinner on March 30 and the inviting of 30-40 non-petroleum engineering students from local universities to the meeting to introduce them to the industry

Scott McGurk, Continuing Education Chairperson, reported a good response to his email request for input as to training needs of local industry. The top three topics are 1) Remedial Workover Techniques, 2) Fracture Stimulation and 3) Water Production Reduction. Scott will develop plans to develop workshops relating to these topics.

Iraj Ershaghi is making plans for a meeting of 4 – 5 talks next February at USC to celebrate LASPE's 50th Anniversary Celebration. Raj Upadhyay will continue

to investigate the actual founding date of LASPE, which was certainly earlier than 1955.

The Board was advised that Ed Mayer's wife, Ann, passed away December 10, 2004. The Board requested that flowers be sent and that LASPE forward a donation to the Gould School of Law at USC in her honor.

The Board meetings are open to all LASPE members. Please consider sitting in on our next meeting, January 11, 2005 starting at 10 AM at the Long Beach Petroleum Club.

Please notify SPE Headquarters directly with change of address: P.O. Box 833836, Richardson, TX 75083 Tel: (800) 456-6863 Fax: (972) 952-9435 or go to <http://www.spe.org/mbrservices/index.cfm>

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SJV SECTION	UPCOMING SHORT COURSES
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San Joaquin Valley SPE Section is offering the following short courses:

Course Title / Cost/ Instructor / Location	Course Date	Registration Deadline
Understanding & Applying Open Hole Logs – Petrophysics I \$600 Gary Batcheller, GWB Consultants Courtyard by Marriott	Jan. 24-25	Jan 10
How to Recognize a Good Log – Petrophysics II \$295 Gary Batcheller, GWB Consultants Courtyard by Marriott	Jan. 26	Jan 10
Evaluating Cement Integrity including Foam Cement \$600 Gary Batcheller, GWB Consultants Courtyard by Marriott	Jan. 27-28	Jan 10
Formation Evaluation through Cased Hole \$600 Jim Smolen, Petroleum Computing Inc. Courtyard by Marriott	Feb. 21-22	Feb. 7
Water Identification & Fluid Movement in Wells (PL) \$600 Jim Smolen, Petroleum Computing Inc Courtyard by Marriott	Feb. 23-24	Feb. 7

For more information about these or future courses, please contact:

Anil Mathur
Continuing Education Arrangements Director
(661) 303-7713 or amathur@slb.com