

Conference Preview

# *SPE Western Regional Meeting*

21–23 March 2012

Bakersfield, California, USA

Marriott Hotel at the Convention Center

[www.spe.org/events/wrm](http://www.spe.org/events/wrm)



Society of Petroleum Engineers®

# Welcome

## Dear Colleagues,

We invite you to attend the 2012 SPE Western Regional Meeting, 21–23 March in Bakersfield, California, USA.

This year, the Western Regional Meeting will maintain its traditional base of thermal and non-thermal regional operations but will be expanded to include a strong focus on smart fields and artificial intelligence. We see the benefits of integrating these high-end technologies with the dense well operations existing in our region.

Given the increased interest in tight shale operations, sessions will include shale and diatomite development. California's history of developing tight diatomites and tight shales will create mutual learnings between the two high interest topics.

We hope these topics and technologies will spur you to participate in this exciting regional event.

Sincerely,

**Andrei Popa,**  
Chevron  
Co-Chairperson

**Young Kirkwood,**  
Occidental Petroleum  
Co-Chairperson

**Ronald Behrens,**  
Chevron  
Technical Chairperson

## Program Committee

### *Conference Co-Chairpersons*

**Andrei Popa,** Chevron  
**Young Kirkwood,** Occidental of Elk Hills, Inc.

### *Program Committee Chairperson*

**Ronald Behrens,** Chevron

**Ray Clanton,** Occidental of Elk Hills, Inc.  
**Abhijit Dandekar,** University of Alaska  
**Iraj Ershaghi,** University of Southern California  
**Larry Miller,** Halliburton  
**Tim Frame,** Baker Hughes  
**Paul Henshaw,** PetroSkills  
**Scott Myers,** Baker Hughes  
**Kristian Jessen,** University of Southern California  
**Jeffrey Jones,** Vintage Resources  
**Terry Kloth,** Pacific Gas and Electric Company  
**Alan Malcolm,** Aera Energy LLC  
**Larry Murray,** Occidental of Elk Hills, Inc.  
**Max Solanki,** Occidental of Elk Hills, Inc.

**Sam Sarem,** Improved Petroleum Recovery Consultants  
**Jerry Hale,** Chevron Energy Technology Company  
**Michael Husband,** BP  
**John Kaiser,** Bureau of Ocean Energy Management  
**Jesse Frederick,** WZI Inc  
**Shirish Patil,** University of Alaska  
**Gordon Pospisil,** BP  
**Reza Rastegar,** Chevron  
**Randahl Roadifer,** ConocoPhillips  
**Akshay Sahni,** Chevron  
**Jack Stevens,** Chevron Energy Technology Center  
**Jalal Torabzadeh,** California State University  
**Lwanga Yonke,** Aera Energy

## Conference Focus

The SPE Western Regional Meeting covers topics specific to the oil industry in the West Coast region of the US. The main goal of this meeting is to allow for information exchange between engineers and non-engineers in the industry. Experts will discuss a variety of issues related to the meeting topics listed below.

## Topics Covered

- ◆ Smart fields and artificial intelligence (AIPA)
- ◆ Shale and diatomite development
- ◆ Thermal recovery and operations
- ◆ Case histories of California & Alaska's fields
- ◆ Social responsibility, health, air and water quality, and GHG emissions

## About SPE

The Society of Petroleum Engineers is a not-for-profit organization. Income from this event will be invested back into SPE to support many other Society programs. When you attend, sponsor, or exhibit at an SPE event, you help provide even more opportunities for industry professionals to enhance their technical and professional competence. Scholarships, certification, the Distinguished Lecturer program, and SPE's energy education program Energy4me are just a few examples of programs that are supported by SPE.

For more information about exhibition opportunities, please contact:

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## Schedule of Events (as of 17 January)

### Monday, 19 March

Training Course Registration	0700-0800
Training Courses	0800-1700

### Tuesday, 20 March

Training Course Registration	0700-0800
Training Courses	0800-1700
Registration	1600-1900
Student Paper Contest-MS Division	0900-1200
Student Paper Contest-PhD Division	1400-1700
Icebreaker Reception	1830-2030

### Wednesday, 21 March

Author's Breakfast	0700-0800
Registration	0700-1700
Exhibits	0800-1700
Plenary Session	0800-0930
Technical Sessions	0945-1200
Welcome Luncheon	1215-1345
Technical Sessions	1400-1715
Poster Session	1600-1830
Hockey Game & Reception	1830-2030

### Thursday, 22 March

Author's Breakfast	0700-0800
Registration	0700-1700
Exhibits	0800-1700
Plenary Session	0800-0930
Technical Sessions	0945-1200
Annual Regional Awards Luncheon	1215-1345
Technical Sessions	1400-1715
Poster Session	1600-1830
Reception at Fox Theater	1830-2130

### Friday, 23 March

Author's Breakfast	0700-0800
Registration	0700-1200
Exhibits	0800-1200
Technical Sessions	0800-1115
Wine Trip	0800-1830
Golf Tournament	0700-1200
Golf Tournament	1300-1800

## Hockey Night

Wednesday, 21 March

Watch the Bakersfield Condors pro hockey team take on the Colorado Eagles while enjoying dinner and refreshments in an exclusive on-the-ice suite.

Tickets USD 35 per person

## Night at the Theater

Thursday, 22 March

Lights! Camera! Action! Your ticket to an evening of entertainment is waiting for you at the historic Fox Theater. Your evening will include light appetizers and host bar concluding with a feature length, award winning film.

Tickets USD 25 per person

## Wine Tasting Tour

Friday, 23 March

Spend the day tasting fine wines at four of California's very best central coast wineries. Pricing includes lunch (prime rib or veggie lasagna) hosted at a winery, tasting fees, and a souvenir wine glass. Depart from Bakersfield at 0800, return 1830.

Tickets USD 90 per person

## 2-Day Training Courses

Monday, 19 March–Tuesday, 20 March

### Hydraulic Fracturing/Pressure Analysis

Instructor: Mike Smith

This course presents the basics of analyzing fracturing pressure, including design parameters that can be determined and the uses and limitations of such analysis for on-site design. Sessions include real-world examples from a variety of wells, from tight gas and shale to high permeability, offshore, and frac-pack treatments.

### Oil and Gas Economics and Uncertainty

Instructor: Rodney Schulz

Participants will identify, evaluate, and quantify risk and uncertainty in every day oil and gas economic situations in this course. It reviews the development of pragmatic tools, methods, and understandings for professionals that are applicable to companies of all sizes.

### Modern Production Data Analysis for Unconventional Reservoirs

Instructor: David Anderson

Learn how to critically assess data quality and perform qualitative diagnostics on well production data in this course. Attendees will receive a comprehensive methodology for well performance analysis with specific focus on unconventional oil and gas. Participants are encouraged to bring their own data, as time will be allotted to go through examples during class.

Laptops are required.

## 1-Day Training Courses

Tuesday, 20 March

### Horizontal Well Completions

Instructors: Sudiptya Banerjee and Aaron Burton

Learn about the challenges and options of horizontal drilling and develop strategies for completing horizontal wells. This course covers both cased-hole and open-hole configurations, with or without sand control.

### Artificial Lift

Instructor: Rajan Chokshi

Develop a solid foundation in all forms of lift and explore concepts of the selection process to maximize production and return on investment. Learn the advantages and disadvantages of each system, application considerations, and sample performance predictions.

### Streamline Simulation: Theory and Practice

Instructor: Akhil Datta-Gupta

This course features introductory and advanced concepts in streamline simulation and its applications. Review a theory of streamlines and streamtubes in multidimensions, and weigh the strengths and limitations of streamline modeling compared with finite difference simulation.

## Opening Plenary Session

Wednesday, 21 March

0800–0930

### Competitive Challenges & Opportunities in California

A panel of executives will discuss a variety of topics critical to the regional industry including strategic growth, cost management, technology, organizational capability and regulatory issues.

### Invited participants:

Gaurdie Banister, CEO, Aera Energy LLC  
Mike Handren, Operations Mgr, PXP  
Bruce Johnson, Vice President, Chevron  
Shawn Kerns, President & General Mgr, Occidental Petroleum

### Moderators

David Macway, Partner, Macway-Uhl LLC  
Jack Stevenson, Heavy Oil R&D Portfolio Mgr, Chevron

## Welcome Luncheon

Wednesday, 21 March

1215–1345



### Keynote Speaker:

Tim Kustic; Department of Oil, Gas & Geothermal Resources

## Annual Regional Awards Luncheon

Thursday, 22 March

1215–1345



### “Opportunities and Expectations for the Future of SPE”

### Speaker:

Ganesh C. Thakur, 2012 SPE President, Vice President, Global Advisor RM and Fellow, Chevron Energy Technology Company

# Technical Program (as of 17 January)

Wednesday, 21 March 0945-1200

## ARTIFICIAL INTELLIGENCE: INTEGRATED OPERATIONS AND SMART FIELDS

### Session Chairpersons

Randy Roadifer, John Stalder, Conoco-Phillips

Advanced technologies of data acquisitions, processing, visualization and use of intelligence agents within smart fields are the focus of this session on artificial intelligence.

Wednesday, 21 March 0945-1200

## RESERVOIR ENGINEERING AND CHARACTERIZATION: CLASSICAL RESERVOIR ENGINEERING AND MODELING

### Session Chairperson

Gordon Pospisil, BP

Relevant reservoir topics are covered in this session, from field decline characteristics and reservoir modeling ranging from non reservoir effects on data, to a surrogate modeling technique to a case history.

Wednesday, 21 March 0945-1200

## SHALE AND DIATOMITE: HYDRAULIC FRACTURING

### Session Chairpersons

Kashy Aminian, West Virginia University  
Rakesh Trehan, Halliburton

Production performance from producers with both single and multiple fractures, and fracturing techniques, are the topics presented in this hydraulic fracturing session.

Wednesday, 21 March 1400-1715

## ARTIFICIAL INTELLIGENCE: DATA MINING AND ARTIFICIAL INTELLIGENCE

### Session Chairpersons

Turgay Ertekin, Penn State  
Akshay Sahni, Chevron

Offering state-of-the-art application of data mining and predictive analytics tools for knowledge extraction, pattern recognition, and forecasting, this session presents a range of applications, from reservoir characterization to reservoir modeling and optimization.

Wednesday, 21 March 1400-1715

## HEAVY OIL: CONVENTIONAL THERMAL RECOVERY

### Session Chairpersons

Jeff Jones, E&B Resources  
Abhijit Dandekar, University of Alaska

Covering the breadth of heavy oil-related topics, this session features technology transfer, recovery mechanisms, facilities and case history in steam flooding.

Wednesday, 21 March 1400-1715

## SHALE AND DIATOMITE: NOVEL FRAC, ACID, AND SURFACTANT STIMULATION

### Session Chairpersons

Peter Zannito, Aera  
Ray Clanton, Oxy

Stimulation ideas separate from hydraulic fracturing are the topic of this session, which leads off with a lab study on a new fracturing technique, follows with four papers on acid stimulation, and ends with a surfactant discussion.

Thursday, 22 March 0945-1200

## ARTIFICIAL INTELLIGENCE: RESERVOIR MODELING AND SURVEILLANCE USING ARTIFICIAL INTELLIGENCE TECHNOLOGIES

### Session Chairpersons

Andrei Popa, Chevron  
Lwanga Yonke, Area

Addressing the use of surrogate models and pattern recognition techniques for reservoir modeling and production optimization, this session also focuses on real-time decision-making applications using knowledge domain for reservoir surveillance and management.

Thursday, 22 March 0945-1200

## RESERVOIR CHARACTERIZATION AND CHARACTERIZATION: REGULATORY AND NEW METHODS TO GET OOP

### Session Chairperson

Malcolm Allan, Aera

This session delivers two distinct elements: first reviewing how operators must adapt to the changes in California injection regulations, then focusing on recovery methods without the usual prewaterflood log petrophysics.

Tuesday, 20 March 0945-1200

## RESERVOIR ENGINEERING AND CHARACTERIZATION: ALLOCATION FACTORS AND INTER WELL PROPERTIES

### Session Chairpersons

Iraj Ershaghi, USC  
Mike Husband, BP

This water flood session centers on connectivity through a glimpse at allocation factors and a method to get inter well properties, as well as discussions on production test data interpolation for purposes of better connectivity calculations.

Thursday, 22 March 1400-1715

## RESERVOIR ENGINEERING AND CHARACTERIZATION: WATERFLOOD TECHNOLOGIES AND RESERVOIR CHARACTERIZATION

### Session Chairpersons

Jerry Hale, Chevron  
Tony Singh, Pinnacle

Discussions on water flood from both low salinity and conformance control view pairs with reservoir characterization information with data ranging from the core scale to the seismic scale in this session.

Thursday, 22 March 1400-1715

## HEAVY OIL: SAGD

### Session Chairpersons

Shirish Patil, University of Alaska  
Reza Rastegar, Chevron

High temperature ESPs and injection control technologies are hot topics in heavy oil exploration. Each is a focus of this stream-assisted gravity drainage session.

Thursday, 22 March 1400-1715

## SHALES AND DIATOMITE: SHALE FRACTURE MODELING

### Session Chairpersons

Larry Murray, Oxy  
Bill Minner, StrataGen

Shale fractures and the production they give are the topics in this relevant session on fracture modeling.

Friday, 23 March 0800-1115

### HEAVY OIL: THERMAL FACILITIES AND EMERGING TECHNOLOGIES (SOLAR, ELECTRICAL, AND COMBUSTION)

#### Session Chairpersons

Ron Behrens, Chevron  
Tony Kovsky, Stanford University

Emerging electrical and combustion heating technologies highlight this session that also drills into the subject of thermal facilities.

Friday, 23 March 0800-1115

### DRILLING AND COMPLETIONS

#### Session Chairpersons

Dave Wagner, Chevron  
Jalal Torabzadeh, Cal State University, Long Beach  
Modeling of multiple hydraulic fractures in shales kicks off this session, which then returns to the topics of drilling and completions with abandonments, wellbore designs, and drilling itself.

Friday, 23 March 0800-1115

### RESERVOIR ENGINEERING AND CHARACTERIZATION: CO<sub>2</sub> SEQUESTRATION, STORAGE, AND MODELING

#### Session Chairperson

Kristian Jessen, USC  
CO<sub>2</sub> regulations in California is the initial focus of this session, which then turns technical with a look at CO<sub>2</sub> WAG operations and CO<sub>2</sub> sequestration modeling.

### Copyright Information

All SPE sessions are protected by US copyright laws. Photography and video/audio recording of any kind are strictly prohibited in the sessions and throughout the exhibition area.

## Registration

Register by **5 March 2012** and save USD 100 on your full conference registration!

Register now at [www.spe.org/events/wrm/2012!](http://www.spe.org/events/wrm/2012!)

Conference participants can register via the Internet, mail, or fax. Advance registrants may pay in USD by check or credit card. Checks are acceptable from US bank checking accounts only and should be written for the amount of purchase only. SPE accepts American Express, Visa, MasterCard, and Diners Club credit cards. Payment can also be made by wire transfer; contact registration@spe.org for bank details.

Full Registration All prices listed in US dollars (USD)	By 5 March	After 5 March
Member	300	400
Nonmember	400	450
Spouse	50	75
Student (with valid college ID)**	50	75
1-Day Option (Wednesday-Thursday)		
Member	175	200
Nonmember	250	275
Half Day Option Friday Only		
Member/Nonmember	100	125
* Full registration fees include access to technical sessions, exhibition, receptions, coffee breaks, and one copy of the Proceedings.		
** Student registration includes access to the technical sessions, exhibition, receptions, and coffee breaks. It does not include access to the luncheons or a copy of the Proceedings.		
*** 1-day registration includes those items for the specified day. Does not include luncheons or Proceedings.		

Additional Proceedings (onsite pick up only)		
Member	50	50
Nonmember	75	75
Additional Ticketed Items		
Welcome Luncheon-Wednesday		
Nonmember	50	75
Member	75	100
Awards Luncheon-Thursday		
Member	50	75
Nonmember	75	100
Training Courses		
2-Day Courses		
Nonmember	1400	1500
Member	1400	1500
1-Day Course		
Nonmember	750	850
Member	750	850

## Badge Pickup

All domestic and international attendee badges will be held for pickup on-site during the registration hours at the registration counter. Please be prepared to show photo ID (passport or driver's license) in order to pick up your conference badge.

## Cancellation Deadline

To receive a full refund, all cancellations must be received in writing no later than 5 March 2012. Cancellations made after 5 March will not be refunded. Send cancellation requests by email to [registration@spe.org](mailto:registration@spe.org); by fax to +1.866.460.3032 (toll-free US/Canada) or +1.972.852.9292; or by mail to SPE Registration, PO Box 833836, Richardson, TX, USA 75083.

## Questions?

Contact us by email ([registration@spe.org](mailto:registration@spe.org)) or by phone (+1.972.952.9393, ext 216).

## Accommodations

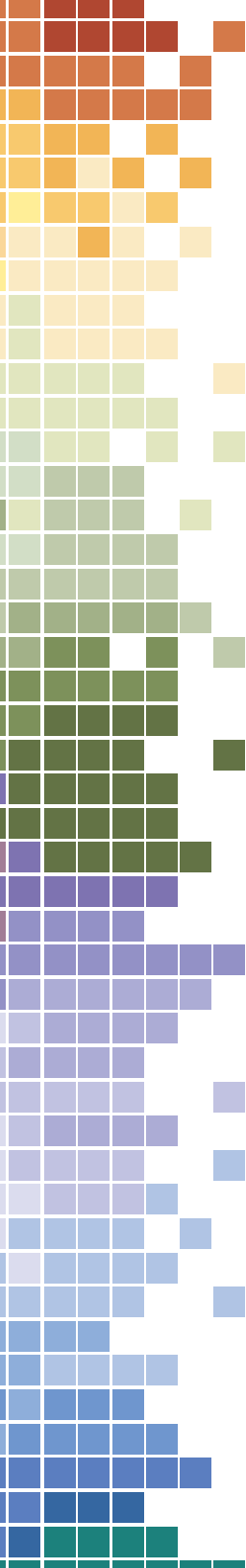
Rooms have been reserved for the SPE Western Regional Meeting at the Bakersfield Marriott at the Convention Center. Visit [www.spe.org/events/wrm](http://www.spe.org/events/wrm) to make your housing arrangements online or call +1.661.323.1900 and reference the SPE conference rate of \$109. The Marriott at the Convention Center is located in the heart of beautiful downtown Bakersfield. Unique amongst hotels in Bakersfield, it is a full-service Bakersfield convention center hotel that is connected to the Rabobank Arena.

### **Bakersfield Marriott at the Convention Center**

801 Truxtun Avenue  
Bakersfield, California 93301 USA  
Reservations: +1.661.323.1900

## **Exhibitors** (as of 17 January)

Aera Energy LLC  
Baker Hughes  
Clariant Oil Services  
Compressco Partners  
Core Labs  
Eco-Tec Inc.  
esg Solutions  
EV Downhole Video  
Halliburton  
Muth Pumps  
PROS Incorporated  
Schlumberger  
SPOC Automation  
Stotler International  
Well Analysis Corp.



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**21–23 March 2012**  
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**Marriott Hotel at the Convention Center**



**Society of Petroleum Engineers**  
222 Palisades Creek Drive  
Richardson, TX 75080-2040 USA

Register by **5 March 2012** and save USD 100!