

MARCH 2013

SPE GULF COAST SECTION NEWSLETTER

Well Deliver, Management

Drill More Wells in Less Time

SPE DIGITAL ENERGY CONFERENCE & EXHIBITION 2013

March 5th-7th P. 9

R&D LEADERSHIP PERSPECTIVES ON RUNNING A R&D ORGANIZATION

RESEARCH & DEVELOPMENT P. 23

INTEGRATION OF SHALE GAS PRODUCTION DATA AND MICROSEISMIC FOR FRACTURE AND RESERVOIR PROPERTIES USING A FAST MARCHING METHOD

GENERAL MEETING P. 13

TWO EMERGING WATER QUALITY ISSUES IN THE PERMIAN BASIN WESTSIDE & PERMIAN BASIN P. 21/27

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2012-2013 SPE-GCS Chair



The SPE Gulf Coast Section leadership is guided by a Strategic Plan, designed to be a roadmap for the future. It guides policies, programs and decision making for the section in long term tactical planning, annual budgeting and day-to-day operations. The Strategic Plan reaffirms the mission of the Gulf Coast Section, as defined in our bylaws, and directs the section leadership to focus its efforts on a number of areas. Our current Strategic Plan was prepared and approved by the SPE-GCS Board of Directors in 2005. Mike Strathman (Vice Chair) and his 2013 Strategic Plan committee have begun preparation of a new Strategic Plan for the Gulf Coast Section. The 2013 Strategic Plan committee members are Steve Baumgartner (Chair), Hiep Vu (Past Chair), Lucy King (Secretary), Rob Bruant (Treasurer), David Tumino (Vice Treasurer) and Jeanne Perdue (Membership). A draft of the 2013 Strategic Plan will be presented and discussed at the March Board of Directors meeting.

The 2013 SPE-GCS Strategic Plan will address four areas:

- Professional Development for Members
- Investment in Community
- Membership Support
- Administrative and Financial Governance

The SPE-GCS Strategic Plan calls for a Long Range Plan (LRP) outlining specific action items and initiatives that are shaped by the Strategic Plan. The LRP currently in place was approved in 2009 for the years 2009-2012. Many of the initiatives of the 2009 LRP have been accomplished or are in progress. The Gulf Coast Section is due for a new LRP. Mike Strathman and his 2013 Strategic Plan Committee will form the 2013 Long Range Planning committee to accomplish this important work. The 2013 LRP committee will be tasked with reviewing implementation of the initiatives outlined in the 2009 LRP and making recommendations for initiatives to be included in the 2013-2016 Plan. The new LRP will be guided by and aligned with the 2013 Strategic Plan. It is important that the new LRP incorporates changes that the SPE-GCS membership wants, while not changing established and well-appreciated initiatives of the section. To that end, we ask each of you to communicate with the members of the LRP Committee to voice your opinions and suggestions on new initiatives to be pursued over the next three years, as well as which established initiatives should continue to be supported by our section.

In September, we announced that we were giving the SPE-GCS website (http://www.spegcs.org/) a facelift. Valerie Martone (Communications) accepted the challenge of managing this project. We thank her for all the time and effort she contributed to successfully completing the project. The simple, organized format of our new site (which went live in January) makes it easy to navigate to what you are interested in, whether it is tracking down a presentation you heard, learning how to advertise your company with us or even finding a photo of you and your colleagues at a recent SPE-GCS event. One of the improvements in the new site is the integration with the SPE website as well as social networking sites. We encourage you to sign up for the e-newsletter, become a member or connect with other members on our various social media outlets. Please visit the new site and let us know what you think.

Andrea Hersey was recently announced as the prize-winner for the SPE Gulf Coast North America Region in the 2012 Build the World of SPE membership recruitment contest. She recruited more SPE members during 2012 than anyone else in the region. Congratulations to Andrea on this significant achievement.

Register now for the 40th Annual SPE Gulf Coast Section Golf Tournament. This Gulf Coast Section event contributes significantly to our Scholarship Fund, which helps college and university students who will enter our industry. The scholarships are extremely important to help address the unprecedented demand in the energy industry for scientists, engineers and technicians.

We would like to know how we can serve your interests with programs and activities organized by the SPE Gulf Coast Section study groups and committees. Please send us your comments and suggestions. My email address is sbaumgartner@marathonoil.com.

FEATURES

March 2013

STUDY GROUPS

RESEARCH & DEVELOPMENT 03/07/13 R&D Leadership Perspectives on Running an R&D Organization



NORTHSIDE 03/12/13 Shale Resource Assessment & Development – Full Life Cycle Integrated Approach

P.19

GENERAL MEETING 03/14/13 The Emergence of Liquified Natural Gas as a Transportation Fuel in North America

P 11

DIGITAL ENERGY

03/20/13 Upstream Unification-Bringing Together Disciplines Through Better Software Integration

P.15

DRILLING 03/20/13 Well Delivery Management- Drill More Wells in Less Time

P.17

PERMIAN BASIN/WESTSIDE 03/20/13 Two Emerging Water Quality Issues in the Permian Basin

P 21

RESERVOIR 03/25/13 Integration of Shale Gas Production Data and Microseismic for Fracture and Reservoir Properties

P.25

COMPLETIONS & PRODUCTION 03/27/13

Hydraulic Fracturing of Horizontal Wells-Realizing the Paradigm Shift That Has Been 30 Years in Development





13TH ANNUAL SPORTING CLAYS TOURNAMENT Friday, June 7, 2013

COMMITTEES

YOUNG PROFESSIONALS

03/14/13 A Recipe for Shameless, Constructive Self-Promotion

YP Happy Hour

AUXILIARY March 2013 Activities

P.29

MORE 2013 EAST TEXAS OILFIELD EXPO

P 8

2013 SPE DIGITAL ENERGY **CONFERENCE & EXHIBITION**

P. Q





2013 SPE-GCS GOLF TOURNAMENT Monday, April 15th, 2013

IN EVERY ISSUE

THEN & NOW by Buddy Woodroof

P.4

SPE-GCS MEMBERSHIP REPORT January 2013

VOLUNTEER SPOTLIGHT Amy Timmons

P. 7

SPE GULF COAST SECTION DIRECTORY Your guide to your organization leaders

P.34

RICE/UH SPE STUDENT CHAPTER MEMBER RECEIVES AWARD

E28

SPE-GCS BOARD OF DIRECTORS MEETING

LOCATION SPE Houston Office

EVENT CONTACT

Sharon Harris 713-457-6821 EXT. 821

7:30 AM TO 10:30 AM



Column by BUDDY WOODROOF

March 1998

Pemex continues to drop reserve estimates, this time for their southern region, dropping the total from 11.862 billion boe (the last year) to 11.056 billion boe. (There goes the peso again!)

Shell and Unocal resolve the lawsuit filed by Shell regarding protection of proprietary E&P data that could be potentially transferred to Unocal by a number of former Shell employees hired by Unocal.

As the turn of the century approaches, an international research firm reports the results of an operator poll ranking foreign countries in the following order as to their favorable status for new E&P ventures: U.K., Australia, Brazil, Kazakhstan, Indonesia, Algeria, Venezuela, Argentina, Egypt, and Azerbaijan.

The U.A.E. bans all oil-related barge traffic in their territorial waters and ports after a barge sinks trying to smuggle Iraqi oil through the Persian Gulf. The resulting spill forced the closure of desalination plants, which supply drinking water to the region.

Light, sweet crude oil - \$15.23/bbl; Natural gas - \$2.21/MMbtu; U.S. active rig count - 957

March 2002

ExxonMobil reports plans to enter the Taiwanese retail market, which was just recently opened to foreign competitors. Until they secure a foothold in the market, they plan to buy products from state-run Chinese Petroleum Corp. for resale. (Interesting marketing strategy!)

Gaz de France signs a contract with a French shipbuilder to construct the world's first diesel electric LNG carrier. The vessel will be the first of its kind to use diesel-electric propulsion.

The Sakhalin I Consortium plans to build an advanced, special-purpose rig to drill extended-reach wells to offshore targets from a land-based site on Sakhalin Island, Russia.

Forest Oil and Anschutz International will soon be selling gas from the Orange basin offshore South Africa. The natural gas will ultimately be used to generate electric power in Cape Town.

Light sweet crude oil - \$23.26/bbl; Natural gas - \$2.62/MMbtu; U.S. active rig count - 769

March 2012

El Paso reports plans to sell its exploration and production business, EP Energy Corp., for \$7.15 billion to affiliates of Apollo Global Management LLC and Riverstone Holdings LLC.

The USGS issues the first shale oil and gas estimates for Alaska's North Slope at 2 billion bbl of oil and 80 tcf of gas which are technically recoverable.

A European Union technical committee hands Alberta oil sands' producers a small victory by declining to declare fuels made from bitumen to be greater emitters of greenhouse gases than those from other types of crude oil.

The Sabine Pass LNG export project takes a step toward a final investment decision by entering an exclusive agreement for financing worth \$2 billion.

Light, sweet crude oil - \$104.20/bbl; Natural gas - \$2.57/MMbtu; U.S. active rig - 1,975



This month we continue our extended look at the life and times of oil magnate John D. Rockefeller.

After a long, tense day at the office in downtown Cleveland, Rockefeller would go home to Euclid Avenue, read the evening newspaper and enjoy his family. But he didn't drink. In keeping with his firm religious beliefs, he was a strict teetotaler. It was with his children that Rockefeller really let down his guard. He balanced fine china on his nose to amuse them. He taught them to skate and swim and ride bicycles. On moonlit nights, he led family bike journeys through the woods, attaching a white handkerchief to his back so the children could follow him easily.

John and Cettie sheltered their children from the family's growing

wealth, paying them tiny allowances, encouraging them to earn spending money by sharpening pencils and doing other household chores and teaching them the importance of duty to one's fellowman, good sense and, above all, religion.

Fortunately for Rockefeller, the Baptist doctrine did not discourage the pursuit of financial gain. The faith's roots were Puritanism and the Puritans saw the ability to earn and save as virtues. Rockefeller, writes one biographer, had a "sense that he was one of God's soldiers and religion made him great." Without religion, without the belief that he was serving God as he grew richer, Rockefeller might not have been such an exuberant capitalist. "I believe the power to make money is a gift from God," he cheerfully declared, "to be developed and used to the best of our ability for the good of mankind."

Next month, his business philosophy begins to take shape and along comes Standard Oil.

Then & Now March

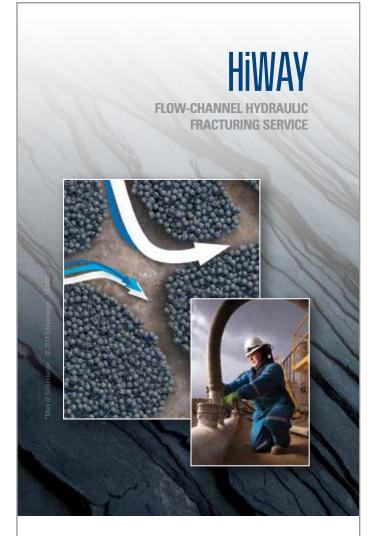
In what year was the first structural map of an oilfield published and who is credited with its preparation?

Answers to Last Month's Quiz

The component of natural gas that flows through a hole faster, conducts heat better and transmits sound at a higher velocity than any other gas except for hydrogen is helium.

Congratulations to Last Month's Winner MARK GLASER WITH WEATHERFORD

If you would like to participate in this month's quiz, e-mail your answer to contest@spe.org by noon, March 15. The winner, who will be chosen randomly from all correct answers, will receive a \$50 gift card to a nice restaurant.



Increase Production While Saving Water, Proppant, and Time.

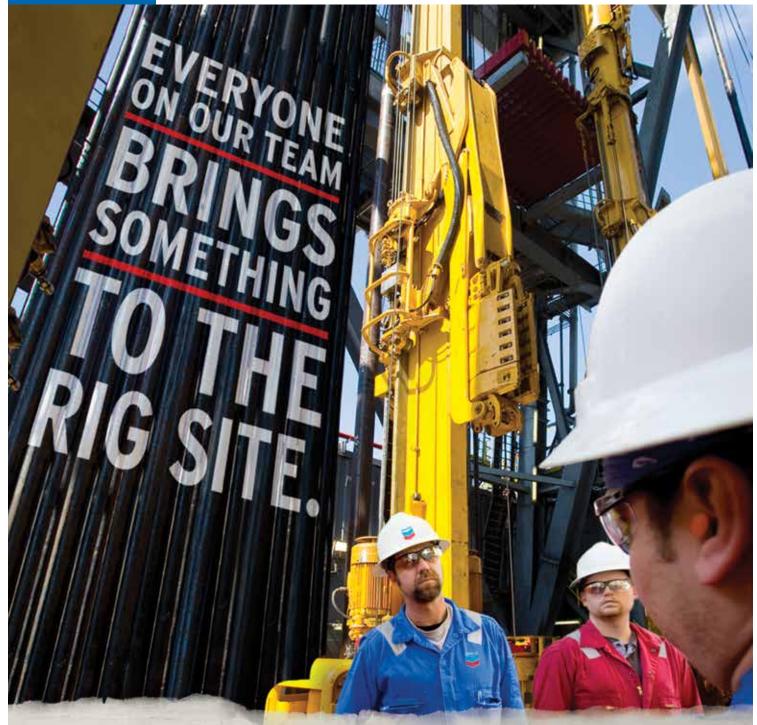
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SPE-GCS MEMBERSHIP REPORT January 2013						
JANUARY 2013 Total: 10,899 YP: 1,879		NOVEMBER 2012 Total: 15,292 YP: 3,198				
		JARY	1	NOVEMBER		
SPE-GCS Members	Total	YP	Total	YP		
New Members	138	56	160	75		
Transferred to Section	94	N/A	222	N/A		
Transferred out of Section	166	N/A	120	N/A		
Unpaid	4,853	1,379	1,669	625		
Student Members	Paid	Unpaid	Paid	Unpaid		
Texas A&M	278	383	791	136		
UH/Rice	98	142	267	58		
НСС	19	21	44	15		
Total	395	546	1,102	209		
Total Paid/Unpaid	11,294	5,399	16,394	1,878		
% Paid	67.7%		89.7%			

2011-2012

2010-2011

16.000

14,000

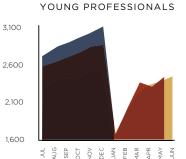
12.000

10.000

300

2011





2012-2013



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VOLUNTEER SPOTLIGHT Amy Timmons

This month the Gulf Coast Section wishes to recognize the volunteer efforts of Amy Timmons, who serves not only as the Treasurer and Web Communications Chair for the Permian Basin Study Group, but also as Web Communications/Publicity Chair for the Drilling Study Group.

Late last October, the Texas Railroad Commissioner, who was scheduled to present at the Permian Basin Study Group meeting on November 13, had to reschedule his talk for the spring. Amy took it upon herself to scramble and find someone to fill that slot on short notice. She ended up getting T. Scott Campbell, Business Development Manager for Production Systems at Weatherford, to speak about deliquification at that study group meeting.

Amy is currently a reservoir stimulation sales specialist for Weatherford, where she designs frac jobs and prepares pricing proposals. Prior to that, she was a marketing communications specialist at BJ Services, working her way up from senior secretary. She earned her degree in Business Management from Le Tourneau University in 2007.

Andrea Hersey Wins Recruiting Contest – Again

Andrea Hersey, past chair of the Young Professionals Committee, received a letter of commendation from SPE President Egbert Imomoh, recognizing her as a winner in SPE's 2012 Build the World of SPE Membership Recruitment Contest. Andrea recruited more SPE members during 2012 than anyone else in the Gulf Coast Region. This is the second time in a row she won for recruiting new SPE members! Who is going to beat her next year?



EAST TEXAS OILFIELD EXPO

The 2013 East Texas Oilfield Expo will be held on Wednesday, March 6th and Thursday, March 7th, 2013 at the Maude Cobb Convention Center in Longview, Texas. Approximately 1200 exhibitors from across the country will converge in Longview for the two-day event, making this the largest oil and gas trade show in the ArkLaTex region. Companies from every facet of the industry will be on hand, and there will also be heavy equipment displays, demonstrations, door prizes and more.

The East Texas Oilfield Expo is one-of-a-kind for this region, both in its scope and in its policies which protect the investments of our exhibitors and sponsors and ensure everyone present can enjoy a relaxed but professional, industry-oriented atmosphere. Our Public Attendance Policy outlines how we ensure the crowd attending our event is industry-only to ensure maximum attendee relevance, protect exhibitor investment and maximize your ROI and lead-gathering potential.

We provide many opportunities for oil and gas companies and organizations to be involved in the show. Besides exhibiting, we provide many sponsorship options for purchase, including A La Carte options. We also offer advertising opportunities including the ability to advertise at our future expos!

This is an exciting time for all companies who do business in the ArkLaTex. We look forward to your participation in our upcoming show, and are ready to assist you in any way to ensure your involvement is a total success.

REGISTER

easttexasoilfieldexpo.com/register-to-attend/

CONTACT

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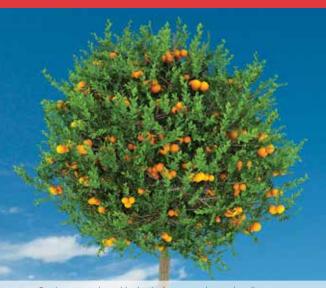
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SPE DIGITAL ENERGY CONFERENCE AND EXHIBITION 2013

The SPE Digital Energy Conference and Exhibition is an international event, which addresses the key aspects of digital oilfield developments. Digital Energy 2013 will present the leading innovations that are moving our industry forward and provide a forum for collaboration among innovators, implementers, and end users.

Technical Program Highlights

Session topics include digitizing business and operating processes, artificial intelligence, remote operations, risk management, workflow transformation, and more.

SPE Training Classes Offered

Enhance your skills through SPE training courses, being held before the Digital Energy Conference. Learn more about the courses on intelligent well technology and oilfield data mining.

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For complete details and registration, visit the website at: www.spe.org/events/dec/2013/index.php

TU-TH March 5-7

Event Info

LOCATION

The Woodlands Waterway Marriott Hotel and Convention Center 1601 Lake Robbins Drive The Woodlands, Texas 77380 281-367-9797

CONTACT *registration@spe.org*

DEADLINE *The early bird registration deadline is February 19, 2013.*

SAVE THE DATE: SPE-GCS ANNUAL AWARDS BANQUET

Save the date and make plans to attend the SPE-GCS Annual Awards Banquet to be held on Thursday, May 23rd, 2013. Mr. Clarence P. Cazalot, President and CEO of Marathon Oil, will be addressing the audience. More details will be announced in the April and May Connect. For information regarding sponsorship opportunities, please contact James Rodgerson at james.rodgerson@bp.com. THURS May 23

SPEAKER

Mr. Clarence P. Cazalot, President and CEO of Marathon Oil

LOCATION

Rice Hotel, Crystal Ballroom 909 Texas Avenue Houston, TX 77002

CONTACT

James Rodgerson james.rodgerson@bp.com

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The Emergence of Liquified Natural Gas as a Transportation Fuel in North America

The current market environment in North America presents a unique opportunity to utilize liquefied natural gas (LNG) as a commercial fuel in various transportation, high-horsepower and industrial applications. An amalgam of key market factors, including, but not limited to, the abundance of domestic natural gas supply, the current price trajectory of both natural gas and oil-indexed fuels and the recent technological advances in the production of natural gas-powered engines have catalyzed the conversion of historical oil-derived fuel demand to LNG.

James Edward Burns, General Manager, LNG for Transport, Shell Americas will lead a discussion on the key commercial, technical and regulatory developments in this exciting new business space.

<u>James Burns</u>

James created Shell's small-scale LNG business in the Americas and currently serves as the General Manager for Shell's LNG for Transport activities throughout the Americas region. He is responsible for the division's overall strategy, execution, project deliveries and customer service in key transport sectors including marine, road transport and rail.

Drawing upon more than 20 years of experience in fundamental areas of both upstream and downstream sides of the energy business, including commercial, trading, and finance, James manages a team with unique transport sector experience. The team is strategically positioned in key markets and is charged with identifying, maturing and operating business opportunities and growing the division.

Previously, James has held various positions in both global and regional roles based out of the United Kingdom, the Netherlands as well as the United States. After receiving a BBA, with an emphasis on marketing from California State University, James earned a EMBA from the University of Houston.



11:30 AM TO 1:00 PM



Event Info

SPEAKER James Burns GM, LNG for Transport - Americas Shell

LOCATION Petroleum Club 800 Bell Street, 43rd floor Houston, TX 77002

EVENT CONTACT

Barry Faulkner 281-627-8790 barryfaulkner@earthlink.net

MEMBERS *\$35 before 3/13/13, \$40 after*

NON-MEMBERS *\$40 before 3/13/13, \$45 after*



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Houston, May 9th

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RESERVES for UNCONVENTIONALS

Houston, March 7-8

This two-day short course will examine methods available to forecast production and estimate reserves in unconventional (low to ultralow permeability, hydraulically fractured, shale gas) reservoirs, and will identify the strength of weaknesses of commonly used methods.

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Hydraulic Fracturing of Horizontal Wells—Realizing the Paradigm Shift That Has Been 30 Years in Development

"The latest multi-stage well completion and stimulation technologies have revolutionized the development of unconventional resources."

Horizontal drilling as a field development technique was pioneered in the early 1980s. As drilling technology advanced, the industry was rapidly able to increase the extended reach of wells and the length of lateral drilled. However, for much of this time, the completion was limited to single zone techniques employing chemical and pressure diversion technologies in an attempt to stimulate the lateral section. Gradually, the industry went through a phased period of testing, culminating in the mechanical isolation technologies of "sliding sleeve" and "plug-and-perf" completions. The outcome of this has been a paradigm shift in unconventional field development where the use of horizontal wells with 15 to 40 mechanically isolated stimulation zones (stages) have resulted in a step change in field development costs and, as a consequence, resulted in the US horizontal rig-count reaching over 50% of all active rigs drilling.

The presentation is divided into three sections:

- A review of horizontal well stimulation technology development including the author's first-hand experience of West Texas tests in the 80s, North Slope Alaska wells in the 90s and current applications in a variety of unconventional resources,
- A discussion of the two main types of multi-stage completion technologies being employed together with the application of both cross-linked and slickwater fracturing, and
- A review of current applications and results.

Dr. C. Mark Pearson

Dr. C. Mark Pearson is an SPE distinguished member who has over 30 years of experience in both the E&P and service industries. He is a well-known industry expert in the field of well completion and stimulation technology. He has published over 30 technical papers and has received a number of industry accolades for the economic impacts of his work. He is President of Liberty Resources LLC, a Denver-based independent E&P company currently on a 4-rig drilling and completion program in the Bakken Oil Shale of North Dakota where he and his team have applied multi-stage completion and stimulation technology over the past three years to the extent that 35-stage horizontal wells are now standard for field development.



11:30 AM TO 1:00 PM

Event Info

SPEAKER Dr. C. Mark Pearson President Liberty Resources LLC

LOCATION Greenspoint Club 16925 Northchase Dr Houston, Texas 77060

EVENT CONTACT Jonathan Godwin 281.921.6526 jgodwin@carboceramics.com

MEMBERS \$35 in advance, \$40 at door

NON-MEMBERS *\$35 in advance, \$40 at door*

SAVE THE DATE

The Completions and Productions Study Group along with the Digital Energy Study Group will be hosting a joint dinner event on Wednesday, April 24th, 2013. Be on the lookout for more information!

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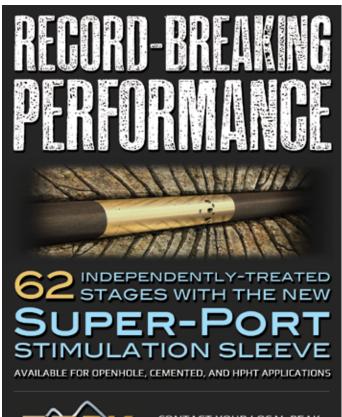
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- Basic Petroleum Engineering Practices BE: April 15-19, July 8-12, 9-13 Sept, Nov 18-22
- Production Operations 1 PO1: June 10-21, Sept 16-27, Dec 2-13
- Applied Reservoir Engineering RE: April 22-May 3, June 17-28, July 15-26, Nov 4-15, Dec 2-13
- Completions and Workovers CAW: June 24-28, October 7-11, November 11-15
- Directional, Horizontal, and Multilateral Drilling DHD: April 1-5, Dec 2-6
- Evaluating and Developing Shale Resources SRE: May 20-24, August 26-30

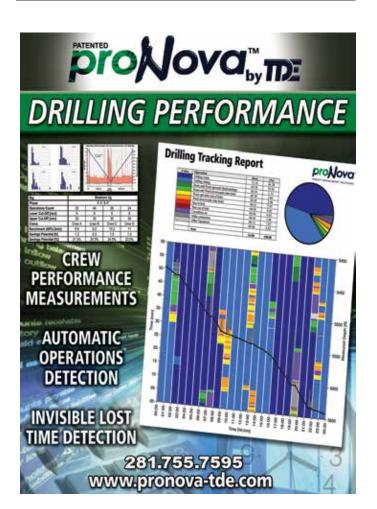
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Upstream Unification-Bringing Together Disciplines Through Better Software Integration

Upstream disciplines have worked in segments with specific handoff artifacts and debriefing. Although available upon request or through information systems, direct and correlated information could see improvement. Southwestern Energy has undertaken the task of unifying the various real time activities (specifically geosteering, drilling, completions and production) into a synergistic set of tools and methodologies. This effort includes continuing improvement of external vendor toolsets, internal operations and rapid response applications and solutions.

Mark Reynolds will present an overview of the various initiatives, highlight some of the successes and outline potential follow-on prospects.

Mark Reynolds

Mark Reynolds is the Solution Architect for Upstream Integrated Operations. He is responsible for pulling together individual systems, repositories, control and operations centers to add value, efficiency and safety to the upstream exploration and production environments.

Save the Date

JOINT DINNER

The Completions and Productions Study Group along with the Digital Energy Study Group will be hosting a joint dinner event on Wednesday, April 24th, 2013. Be on the lookout for more information!

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11:30 AM TO 1:00 PM

Event Info

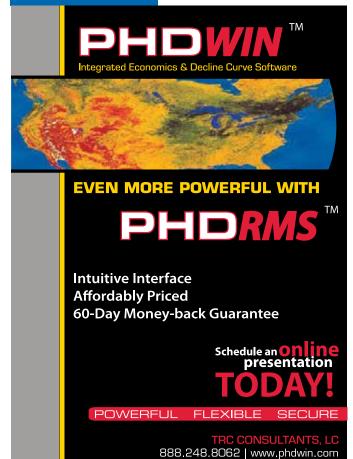
SPEAKER Mark Reynolds Architect, Upstream Integrated Operations Southwestern Energy

LOCATION The Courtyard on St. James Place 1885 Saint James Place Houston, TX 77056

EVENT CONTACT Carol Piovesan 949-232-6353 cpiovesan@apooffshore.com

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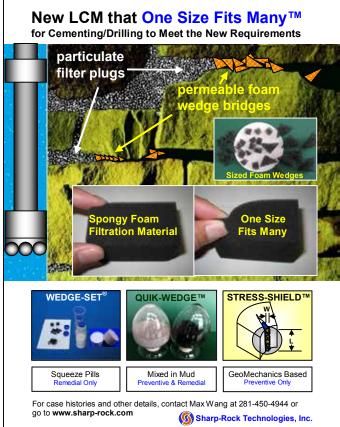
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Well Delivery Management-Drill More Wells in Less Time Improving Efficiency

With the introduction of newly developed production technologies to extract oil and natural gas from previously difficult or inaccessible sources, many oil and gas companies have chosen to tap the potential of onshore gas divisions to positively affect their bottom line. These assets may drill thousands of wells per year. The challenge of planning and tracking numerous wells increases daily as companies leverage new technologies and strive to manage costs.

Key Challenges:

- · How to manage enormous volumes of data
- · How to deliver wells more quickly and more efficiently
- How to exchange data across disciplines, applications and assets
- How to cope with Excel Hell

This presentation will review a case study involving a major oil company that undertook an audit revealing one gas asset was using more than 100,000 spreadsheets and 500 databases to manage well data with manual intervention still required to take well data through to the geologic and reservoir models. Each onshore gas asset managed planned wells with somewhat different processes and tools. In response, the company launched an initiative to define an onshore gas roadmap for new standard solutions. The initiative would offer a collaborative environment that allowed each asset to learn and improve from other assets and to streamline business processes in the overall well delivery process.

<u>Theresa Parks</u>

Teresa Parks is the Solution Lead for Well Delivery and Well Integrity Management focusing on delivering business value while partnering with the business to understand challenges, processes and context to apply the appropriate solutions. She has over 15 years of Information Technology experience within the Oil & Gas, Telecom and IT Service sectors. Her experience includes IT Project Management and Business Analysis for E & P projects. Teresa is a graduate of UT Arlington with a B.S. in Management Information Systems.



11:30 AM TO 1:00 PM



Event Info

SPEAKER Theresa Parks Solution Lead, Well Delivery and Well Integrity Management Wipro Technologies

LOCATION

Greenspoint Club 16925 Northchase Dr. Houston, Texas 77060

EVENT CONTACT

Amy Timmons 713-836-6563 amy.timmons@weatherford.com

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Shale Resource Assessment & Development — Full Life Cycle Integrated Approach

A full lifecycle integrated approach for shale resource is an essential process to establish value creation and to ensure reserves and production growth. With this process, key issues and uncertainties in shale resource development are resolved as plays evolve from concept screening, to exploration and resource assessment, to full development. The integrated approach relies upon key elements, which include Field Demonstrations and Mechanistic Studies.

The design, planning and implementation of systematic and "scalable" field demonstrations are essential elements required to address strategic, development and operational issues. Mechanistic studies are utilized to understand the key production drivers. Shale gas productivity is typically much lower than conventional reservoir systems and often lower than tight gas reservoirs. The flow behavior in these systems must be understood and quantified in order to effectively characterize and predict well and reservoir performance behavior. The primary take-away from this presentation is that new processes and advances in field demonstrations and mechanistic models are key factors required for appraisal and development of global shale resources.

P. K. Pande

P.K. Pande manages an integrated team of subsurface professionals including geologists, geophysicists and reservoir engineers in application of subsurface technologies and best practices for unconventional and Deepwater resources.

He has also served as Subsurface Manager, Ourhoud Field, Algeria, the country's second largest oilfield. He has contributed to the development and reservoir management of numerous world-class reservoirs including Alaska's Prudhoe Bay, North America's largest oilfield and Endicott, the first arctic offshore oilfield. He was actively involved in the design, planning and implementation of the Prudhoe Bay Miscible Gas Project, the largest enhanced oil recovery project in the world. He served as Project Manager for U.S. Department of Energy's flagship project on improved recovery and reservoir characterization methods for shallow-shelf carbonate reservoirs in the Permian Basin.



11:30 AM TO 1:00 PM



Event Info

SPEAKER P. K. Pande Director, Reservoir Technology Anadarko Petroleum Corporation

LOCATION

Greenspoint Club 16925 Northcase Drive Houston, Texas 77060

EVENT CONTACT

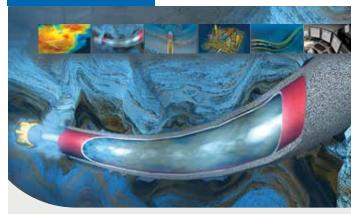
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Two Emerging Water Quality Issues in the Permian Basin

This talk summarizes two different water quality issues that are on the rise in the Permian Basin. Algal blooms in frac ponds and increasing salinity of the aquifer can each contribute to erratic performance of borate-cross-linked guar fracturing fluids if they are not addressed. We present two case studies where a first-principles approach to the underlying chemistry yielded superior fluid performance in the face of these significant challenges.

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Bruce MacKay

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Bruce MacKay has been with Schlumberger for seven years, first as a Product Developer and Research Scientist, and most recently, as the Client Support Laboratory Manager for the North American business unit of Schlumberger Well Services. Prior to joining SLB, he was a Visiting Scientist at the California Institute of Technology after completing a Ph.D. in inorganic chemistry at the University of British Columbia. His area of expertise, broadly stated, is the application of chemical knowledge to problems in stimulation fluids.



11:30 AM TO 1:00 PM

Event Info

SPEAKER Bruce MacKay Product Developer & Research Scientist Schlumberger

LOCATION

Norris Westchase Center 9990 Richmond Ave., Suite 102 Houston, Texas 77042

EVENT CONTACT Amy Timmons 713-836-6563 Amy.Timmons@Weatherford.com

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NOTE *This is a joint event with the Westside Study Group*

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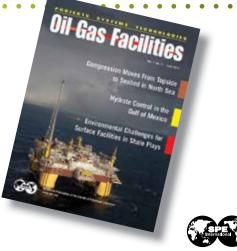
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R&D Leadership Perspectives on Running an R&D Organization

Ben van den Brule will be discussing management of a research organization. Included in this discussion will be topics regarding balancing the project portfolio between incremental and blue sky projects, people development in R&D organizations, R&D tools and methods (lean development, crowd sourcing, etc.) and leveraging collaborations outside of oil & gas. His talk will be followed by a question and answer session.

<u>Ben van den Brule</u>

Ben van den Brule graduated cum laude as a Mechanical Engineer and obtained a PhD in Applied Physics. He worked at the Philips Research laboratories from 1982 to 1991 until he joined Shell in Rijswijk. He has worked in the general research group and was part of the team that started Shell Gamechanger. After that, he left to be the Burgers Professor at TU Delft where he held a chair in Rheology between 1995 and 2000. In 2000, he returned back to Shell full time and joined the management team of Shell's upstream R&D. In 2007, he moved to Houston to become the manager of Research and Engineering of the Unconventional Oil directorate. Currently, he is the Vice President for Unconventional Technologies in Shell's Innovation, Research and Development Organization.



11:30 AM TO 1:00 PM

Event Info

SPEAKER

Ben van den Brule Vice President for Unconventional Technologies Shell

LOCATION

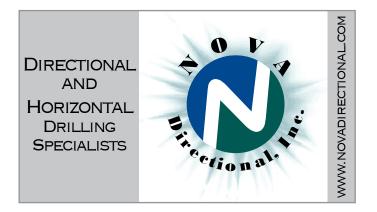
Norris Westchase Center 9990 Richmond Ave., Suite 102 Houston, Texas 77042

EVENT CONTACT Skip Davis

281-359-8556 skdavis@technologyintermediaries.com

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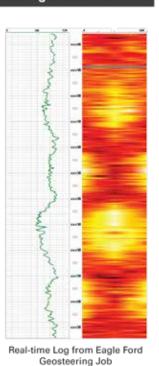
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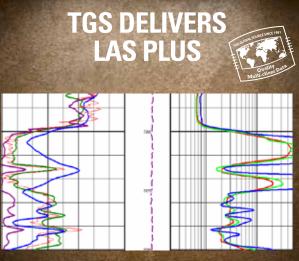
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Integration of Shale Gas Production Data and Microseismic for Fracture and Reservoir Properties

We present a novel approach to calculate drainage volume and well performance in shale gas reservoirs using a Fast Marching Method (FMM) combined with a geometric pressure approximation. Our approach can fully account for complex fracture network geometries associated with multistage hydraulic fractures and their impact on the well pressure and rates. The major advantages are its simplicity, intuitive appeal and computational efficiency. For example, we can compute and visualize the time evolution of the well drainage volume for multimillion cell geologic models in seconds without resorting to reservoir simulation. A geometric approximation of the drainage volume is then used to compute the well rates and the reservoir pressure.

The speed and versatility of our approach makes it ideally suited for parameter estimation via inverse modeling of shale gas performance data. We utilize experimental design to perform the sensitivity analysis to identify the most significant parameters and a genetic algorithm to calibrate the relevant fracture and matrix parameters in shale gas reservoirs by history matching of production data. In addition to the production data, microseismic information is utilized to help us constrain the fracture extent and orientation and to estimate the stimulated reservoir volume (SRV). The proposed approach is applied to a fractured shale gas well. The results clearly show reduced uncertainty in the estimated fracture parameters and SRV, leading to improved forecasting and reserve estimation.

Dr. Michael King

Dr. Michael J. King is Professor and Holder of the Foundation CMG Chair in Robust Reduced Complexity Modeling and the LeSuer Chair in Reservoir Management in the Department of Petroleum Engineering at Texas A&M University. He is the recipient of the 2011 SPE Reservoir Description and Dynamics Award, has served as a Distinguished Lecturer for the SPE and is the co-author of the SPE textbook on Streamline Simulation: Theory and Practice. He joined A&M in 2009 after enjoying 27 years with BP America, both in the U.S. and overseas. His original training was in Physics and Mathematics and he has a PhD from Syracuse University.



11:30 AM TO 1:00 PM



Event Info

SPEAKER Dr. Michael King Professor, Department of Petroleum Engineering Texas A&M University

LOCATION

The Courtyard on St. James Place 1885 Saint James Place Houston, TX 77056

EVENT CONTACT

Jose Villa 281-544-2612 j.villa@shell.com

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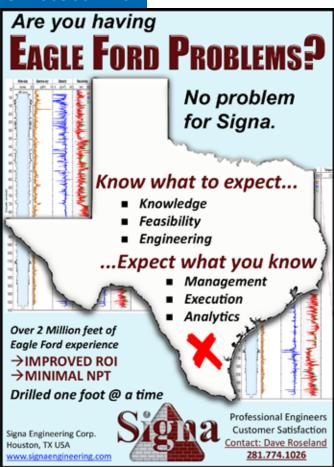
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Thank you to the Young Professionals and the Tennis committee for providing this month's photos. We'd like to feature more photos from our section events and luncheons in the Connect. If your committee or study group has photos from your recent events, luncheons, dinners or conferences, please send the original, high resolution file to the Connect editor at editor@spegcs.org.















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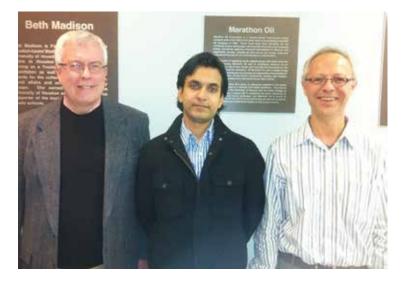
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RICE/UH SPE STUDENT CHAPTER MEMBER

Receives SPE-Dallas Section Scholarship Award



Samarth P. Saxena is one of the recipients of SPE – Dallas Section Scholarships awarded for the year 2012-2013. He is currently pursuing his Masters in Petroleum Engineering from University of Houston. He has a Masters in Electrical Engineering from University of Houston and a Bachelors Degree in Electrical Engineering from Maulana Azad National Institute of Technology, India.

His current focus is on his thesis "Development of a Simple Tunable Viscosity Model for Hydrocarbon Mixtures." His current areas of interest include fluid properties, flow behavior and drilling optimization. He is currently working as a co-op at Halliburton in the Wireline and Perforating PSL. He has been the recipient of three scholarships, two grants and one fellowship during his tenure as a full-time student at University of Houston. He is a member of SPE and IEEE and serves as a committee member for SPE – UH/Rice Student Chapter. He is also a member of Phi Beta Delta and Golden Key International Honor Societies.

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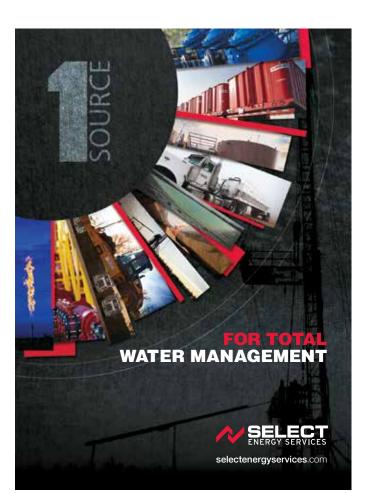
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11:30 AM TO 1:00 PM

SPEAKER

Dr. George King Distinguished Engineering Advisor Apache Corp

LOCATION

Petroleum Club 800 Bell Street, 43rd Floor Houston, TX 77002

CONTACT

Pavitra Timbalia 504-717-3804 pavitra.a.timbalia@exxonmobil.com



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EEC 2013 Co-Chairs: Carlos Hernandez at <u>carlos.hernandez@chevron.com</u> or Alex Beszterda at <u>alex.c.beszterda@conocophillips.com</u>

MARCH YOUNG PROFESSIONALS SOCIAL

DATE

March 14, 2013

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TIME *6:30-8:30 pm*

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DETAILS *Please visit SPEGCS.org*

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COMMITTEE AUXILIARY

MARCH 2013 ACTIVITIES

The Houston SPE Auxiliary will not meet in March 2013. Please watch for news of our April meeting at which we will honor all of our past Presidents.

If you know someone who is interested in joining us or our activities, please contact Nancy Giffhorn, 281-360-4631 or rgiffhorn@AOL.com **EVENT** March 27, 2013

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The golfing choices for Bachelor's sponsors are:

- Bachelors A: 1 Deerwood Team
- Bachelors B: 2 Kingwood Gold Teams

Team Only

DEERWOOD COURSE | \$1,850

All Deerwood teams are Gold level sponsorships, and include

- One foursome team on the premier course
- Morning or afternoon tee time
- Complimentary Food, Cigars and Open Bar throughout the day.
- Special recognition on our tournament table boards and in the tournament book

KINGWOOD GOLD | \$1,200

- One foursome on your choice of Kingwood Country Club golf courses
- Choice of morning or afternoon shotgun start
- Appetizers in the clubhouse after the round.

In addition to the above, Kingwood Gold sponsors receive special recognition (including your company logo) on our tournament table boards and in the tournament book.

KINGWOOD REGULAR | \$700

For all Kingwood registrations, we will try to accommodate your choice of course when you express a preference.

2013 Golf Tournament

KINGWOOD COUNTRY CLUB | DEERWOOD COUNTRY CLUB

You are cordially invited to attend the 40th Annual SPE-GCS Golf Tournament. This Gulf Coast Section event is an important part of fundraising for our Scholarship Fund, which helps send several potential clients or co-workers to college. These scholarships are even more important now with an unprecedented Industry demand for increased engineering, resources and people. We need your support more than event. Please consider participating or sponsoring the event. Visit http://www.spegcs.org/events/2069/ for more information and to register for the annual golf tournament.

> When you select one of our prestigious Masters or Bachelors sponsorship packages, a specific student scholarship is awarded in your company's name; you will help select the recipient, specify the engineering discipline, and have the chance to present the scholarship at the awards banquet. All of the benefits of the Deerwood or Kingwood Gold package are included, as appropriate.

SPE GULF COAST SECTION DIRECTORY

Your guide to your organization leaders

Officers

CHAIR Steve Baumgartner, Marathon Oil Corp. 281-435-0264 sbaumgartner@marathonoil.com

VICE-CHAIR Mike Strathman, The Trinity Group, Inc. 713-614-6227 mike-strathman@att.net

SECRETARY Lucy King, Kinder Morgan CO₂ Company 713-369-9017 lucy_king@kindermorgan.com

TREASURER Robert Bruant, Jr., BP America, Inc. 281-366-2157 Robert.Bruant@bp.com

VICE TREASURER (ADHOC) David Tumino, Murphy Oil 281-717-5123 tuminospe@hal-pc.org

CAREER MANAGEMENT David Flores, Lucas Energy, Inc. 713-528-1881 dflores@lucasenergy.com

COMMUNICATIONS Valerie Martone, Anadarko 832-636-3196 valerie .martone@anadarko.com

COMMUNITY SERVICES *Xuan (Sun) VandeBerg Harris, Consultant* 832-444-5143 *xuan.harris@gmail.com*

EDUCATION Gabrielle Guerre, RyderScott 713-750-5491 gabrielle_guerre@ryderscott.com

MEMBERSHIP Jeanne Perdue, Occidental Oil and Gas 713-215-7348 jeanne_perdue@oxy.com

PAST CHAIR

Hiep Vu, Kosmos Energy 214-593-5095 hvu@kosmosenergy.com

PROGRAMS David Tumino, Murphy Oil 281-717-5123 tuminospe@hal-pc.org

SOCIAL ACTIVITIES

Scott McLean, Express Energy Services 281-772-4927 smclean@eeslp.com

TECHNOLOGY TRANSFER

Russ Neuschaefer, Schlumberger 281-285-1775 rneuschaefer@slb.com

YOUNG PROFESSIONALS

Sandeep Pedam, ConocoPhillips 713-591-5738 sandeep.pedam@conocophillips.com

DIRECTOR 2012-14

Alex McCoy, Occidental Oil and Gas 713-366-5653 alexander_mccoy@oxy.com

Kevin Renfro, Anadarko 832-636-8613 kevin.renfro@anadarko.com

Wolfgang Deeg, Shell 281-544-8279 wfjdeeg@spemail.org

DIRECTOR 2011-13

Jeff Whittaker, Welltec 281-398-9355 jwhittaker@welltec.com

Marise Mikulis, Baker Hughes, Inc. 281-275-7288 marise.mikulis@bakerhughes.com

Steve Turk, Weatherford 281-260-1300 stephen.turk@weatherford.com

SPE GULF COAST NORTH AMERICA REGIONAL DIRECTOR

Bryant Mueller, Aclaro Softworks, Inc 713-781-2000 x 300 bryant.mueller@aclaro.com

Committee Chairs

AWARDS

James Rodgerson, BP 281-221-4085 james.rodgerson@bp.com

CONTINUING EDUCATION

Dorian Hicks, Rice University 713-444-3230 dth1@rice.edu

ESP WORKSHOP

John Patterson, ConocoPhillips 281-221-5298 john.c.patterson@conocophillips.com

GOLF

Cameron Conway, Cactus Pipe 281-217-0660 cconway@cactuspipe.com

INTERNSHIPS

Gabrielle Guerre, Ryder Scott 713-750-5491 gabrielle_guerre@ryderscott.com

MAGIC SUITCASE

Sean K. O'Brien, Chevron 832-854-3660 sean.obrien@chevron.com

NEWSLETTER

Kim Tran, Energy XXI 713-826-7492 editor@spegcs.org

SCHOLARSHIP

Tanhee Galindo, BASF 713-428-4919 tanhee.galindo@basf.com

SPORTING CLAYS

Tim Riggs, Inwell Directional Drilling 713-201-4290 tim.riggs@inwell.com

TENNIS

Bob Fu, BP 713-591-9808 bob.fu@bp.com

WEBTECHNOLOGY

Subash Kannan, Anadarko 713-385-7242 subash_kannan@yahoo.com

SECTION MANAGER

Kathy MacLennan, SPE-GCS 713-779-9595 x 813 kmaclennan@spe.org

Study Group Chairs

BUSINESS DEVELOPMENT Steve Mullican, Grenadier Energy Partners 281-907-4120 smullican@grenadierenergy.com

COMPLETIONS & PRODUCTION

Mark Chapman, CARBO Ceramics 281-921-6522 mark.chapman@carboceramics.com

DIGITAL ENERGY Carol Piovesan, APO Offshore 949-232-6353 cpiovesan@apooffshore.com

DRILLING Joe Tison, Greene Tweed 281-784-7805 wtison@gtweed.com

GENERAL MEETING

James Maffione, Decision Strategies 713-465-1110 jmaffione@decisionstrategies.com

HEALTH, SAFETY, SECURITY, ENVIRONMENT AND SOCIAL RESPONSIBILITY *Trey Shaffer, ERM* 281-600-1016 *trey.shaffer@erm.com*

INTERNATIONAL Michael Cherif, ExxonMobil 713-656-7303

michael.h.cherif@exxonmobil.com

NORTHSIDE Naval Goel 650-307-7267 navalgoel@hotmail.com

PERMIAN BASIN Dan Tobin, ConocoPhillips 832-486-2924 Dan.C.Tobin@conocophillips.com

PETRO-TECH

Marci Nickerson, Consultant 713-446-3400 mnick52@sbcglobal.net

PROJECTS, FACILITIES, CONSTR. Bill Kinney, Technip 281-249-2799 wkinney@technip.com

RESEARCH & DEVELOPMENT Skip Davis, Technology Intermediaries, LLC 281-359-8556 skdavis@technologyintermediaries.com

RESERVOIR

Jose Villa, Shell 281-544-2612 j.villa@shell.com

WATER & WASTE MANAGEMENT Joseph Kilchrist, Ziff Energy 713-302-2727 jkilchrist@sbcglobal.net

WESTSIDE Alex McCoy, Occidental Oil & Gas 713-366-5653 alexander_mccoy@oxy.com

CONNECT Information

Newsletter Committee

CHAIRMAN | Kim Tran editor@spegcs.org

AD SALES | Pat Stone starlite1@sbcglobal.net

BOARD LIAISON | Valerie Martone

EDITOR/DESIGN | Deuce Creative deucecreative.com

SPE Houston Office

GULF COAST SECTION MANAGER Kathy MacLennan | kmaclennan@spe.org

GCS ADMINISTRATIVE ASSISTANT Sharon Harris | sharris@spe.org

HOURS & LOCATION

10777 Westheimer Road, Suite 1075 Houston, Texas 77042 P 713-779-9595 F 713-779-4216 Monday - Friday 8:30 a.m. to 5:00 p.m.

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SOCIETY OF PETROLEUM ENGINEERS GULF COAST SECTION

10777 Westheimer Road Suite 1075 Houston, TX 77042

CALENDAR

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
		Petro-Tech	East Texas Oilfield Expo	Research & Development		
		East Texas Oilfield Expo	Digital Energy Conf & Exhibition	East Texas Oilfield Expo		
3	4	Digital Energy Conf & Exhibition 5	6	Digital Energy Conf & Exhibition 7	8	9
		Northside		General Meeting		
				Board Of Directors		
10	11	12	13	Young Professionals 14	15	16
			Digital Energy Drilling			
			Permian Basin			
17	18	19	&Westside 20	21	22	23
			Completions & Production	Reservoir		
24/31	25	26	Auxiliary 27	28	29	30