APRIL 2012



Gulf Coast Section

GULF COAST SECTION

General Meeting: CO₂ Tertiary Recovery

Drilling & Production Waste Management: Water Reclamation & Reuse

Permian Basin: Production Forecasting in Low-Permeability Oil Reservoirs

Annual Drilling Symposium April 26, 2012

CHAIRMAN'S CORNER

by Hiep Vu, Shell 2011-12 SPE GCS Chair

The 39th Annual SPE-GCS Golf Tournament - The Largest Single-Day Golf Tournament in Texas!

Everybody knows that things have always been larger in Texas. But did you know that every year in April, our very own SPE Gulf Coast Section golf tournament hosts around 1000 golfers in a single-day event, thus making it THE largest single-day golf tournament in the great state of Texas? How crazy is that? If the



folks at Guinness ever decide to start keeping tabs on state records, we would certainly extend them an invitation to join us to make this record official! For those of you who are new to the Section and who haven't had first-hand experience at this wonderful fundraising event, it will be held on Monday, April 16th, so be sure to mark your calendars.

This social tournament has always been a great venue to catch up with old friends and network with new ones. As an added bonus to the overall event experience, there are teams of on-course cookers from our industry's service companies to offer all of our participants a wide variety of tasty, tempting foods that would surely put the strictest of diets to the test! Refreshments are quite plentiful, and the post-tournament door prizes are legendary. The ladies from our Auxiliary Committee even offer a supplementary raffle to give our players another chance to take home a prized possession. In a nutshell, this tournament offers our members much more than just golf.

Spanning across four unique and well-maintained golflinks at the renowned Kingwood Country Club, a thousand of our members and colleagues will be enjoying a "leisurely" Monday round of golf while helping our Section raise the necessary funds to support our worthy scholarship program. On average, the annual outing generates net revenue of approximately \$50,000 a year for SPE-GCS scholarships. These scholarships are awarded to our local high school and college students to help them pursue degrees in petroleum engineering. Our dedicated golf committee always does an excellent job with balancing expenses and revenue to ensure a quality tournament experience for all of the event sponsors and participants.

The committee also continues to search for new ways to improve and evolve the way the tournament is run, especially now that it has grown as much as it has. From past-tournament lessons, the committee has incorporated time-saving methods such as using "Par is Your Partner" to speed up play, lengthening the par 5's to make them unreachable in 2, reducing the number of teams starting on par 3's to limit the backlog, and pre-drawing door prize winners to expedite the prize distribution. In keeping with this efficiency mindset, the committee has worked hard with the Kingwood Country Club in order to bring a new addition for this year's tournament. A fifth course, the Forest course, has been included with the normal lineup

Reservations & Information

For all SPE GCS topical luncheons and social activities, please register online at www.spegcs.org. You must provide your SPE member number to receive member prices. Guests who have not made a reservation online will be charged an additional amount at the door. Walk-ins are not guaranteed admittance.

- Reservations and cancellations required for all events.
- No-shows will be billed.
- Walk-ins will be charged extra.

Mastercard, Visa, American Express, Discover, and Diner's Club are accepted for advance reservations only. The technical and other opinions expressed by speakers at the Gulf Coast Section meetings may not have been reviewed by SPE and do not necessarily reflect the position of SPE, the Gulf Coast Section, its officers, or members. The only forum for rebuttal and discussion is during the meeting.

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For comments, contributions, or delivery problems, contact gcsnewsletter@spemail.org. The deadline for each issue is 6 weeks before publication on the first of each month. The SPE Gulf Coast Section newsletter is published eleven times each program year and is mailed to more than 12,000 SPE members in Houston.

Advertising

For information on advertising in this newsletter or on the SPE GCS web site at www.spegcs.org, please contact Pat Stone, Star Lite Printing, at (281) 530-9711, starlite1@sbcglobal.net or rstone51@comcast.net.

Change of Address

Society of Petroleum Engineers Member Services Dept. P.O. Box 833836 Richardson, Texas 75083-3836 1.800.456.6863 service@spe.org

GENERAL MEETING

CO2 Tertiary Recovery—What We Have Learned Over the Past 40 Years of CO2 Injection Into the Permian Basin

Speaker:	David Merchant Merchant Consulting
Date & Time:	11:30 a.m luncheon Thursday, April 12
Location:	Petroleum Club 800 Bell Street, 43 rd Floor Houston, TX 77002
Cost:	\$35 per member preregistered \$40 for nonmembers preregistered Additional \$5 for walk-ins
Registration: Deadline:	www.spegcs.org Noon, Tuesday, April 10

Valet parking is available at the ExxonMobil Building for \$7. If you have special dietary needs, please note your meal request when you register on-line in the box labeled "Optional comments for the event planner."

For the past 40 years, enhanced-oil-recovery (EOR) projects using carbon dioxide (CO₂) have evolved from a partially understood process filled with uncertainties to a process based on proven technology and experience. Unfortunately, that expertise is used only by a limited number of companies that actually know how to design, implement, and manage a CO₂ EOR flood.

In addition to presenting the history of CO₂ flooding in the Permian Basin, this presentation will summarize what we have learned, what impact CO₂ flooding has on oil production in the United States, and how it can fill the energy gap that exists in the 21st century.



David Merchant is President of Merchant Consulting, a company specializing in CO₂ tertiary oil recovery, reservoir modeling, and basin study analysis to determine the next generation of CO₂ floods.



He started his career 36 years ago (1976)

with Amoco Production Company evaluating projects in the Gulf of Mexico, Egypt, United Arab Emirates, and the Permian Basin of Texas. In 1994 he joined Pennzoil doing the same type of work.

In 1998, he formed Merchant Consulting. For the past 14 years, his company has provided basin study analyses (dot-todot) across the United States, scoping model predictions for the next generation of CO₂ floods, and reservoir simulation analyses targeting both conventional and unconventional CO₂-recovery techniques. His clientele ranges from major oil companies (BP Alternative Energy, BP, Shell, Marathon, Maersk, etc.) to smaller independent companies (Union Royalty, POGO, Pure Resources, etc.).

With over 26 years of CO₂ experience specializing in tertiary oil recovery, CO₂ sequestration, reservoir modeling, and basin study analysis, his plans are to pursue EOR and CO₂sequestration projects across the globe in areas of the world that have EOR potential, but lack the CO₂ to make the projects work.



continued from page 2

(the Deerwood Club, the Island, the Lake, and the Marsh courses) in an effort to speed up the play and improve upon the overall experience of our players. However, there are no guarantees that there won't be a team or two that ends up waiting from time to time, but I hope everybody remembers that you're out there to have a good time, enjoy some good food and good camaraderie, and most importantly, support a good cause. If you have a novel idea to help make the tournament better, please be sure to pass it on to a golf committee member when you see them at the event on April 16th! Good luck and hit 'em straight!

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April Board Meeting

The Gulf Coast Section board of directors meeting will be held from 7:30 to 10:30 a.m., Thursday, April 19 at the SPE Houston office, 10777 Westheimer Road, Suite 1075 (77042). Board meetings are open to any SPE member, but you must register in advance because seating space is limited. If you would like to attend, please register online at www.spegcs.org or contact Sharon Harris at 713.457.6821 or sharris@spe.org.

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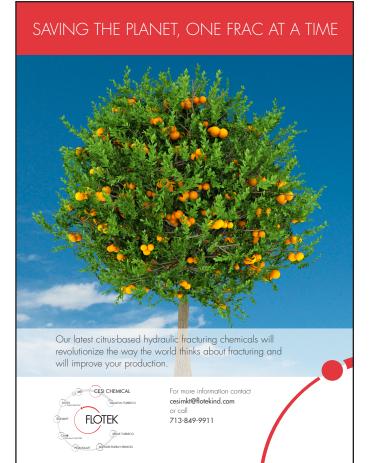
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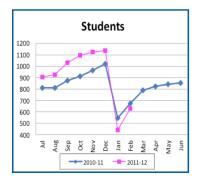
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Monthly Membership Report Gulf Coast Section February 2012

	Feb	-12	Jan	1-12
	Total	YP(subset)	Total	YP(subset)
SPE-GCS Members	11,267	2,032	9,750	1,648
New Members	124	39	113	40
Reinstated Members	12	4	13	5
Transferred to Section	89	39	93	31
Transferred Elsewhere	26	10	23	10
Unpaid	4,037	1,300	5,274	1,580
Student Members	Paid	Unpaid	Paid	Unpaid
Texas A&M	450	282	317	351
UH/Rice	142	87	98	107
HCC	25	15	17	17
Unassigned	12	6	11	6
Total	629	390	443	481
Total Paid/Unpaid	11,896	4,427	10,193	5,755
% Paid	72.9	0%	63	3.9%





Please renew your SPE membership today! www.spe.org/join

Recruiting New SPE Member

This month, rather than highlighting one volunteer, we are highlighting three local SPE members who recently recruited co-workers to join SPE.

- 1. Jake Danos is Engineering Manager in charge of sand control hardware at Schlumberger. Jake recruited Askhat Turlybayev, a Design for Reliability Engineer working with and supporting product development efforts in the Sand Control Engineering group. According to Jake, "Askhat approached me enquiring about what local organizations would provide him access to the latest news and technology in the oil and gas industry. My response was: "This is a no-brainer; you need to join SPE."
- 2. Ronald McNeilly is Drilling Solutions Global Support Manager at National Oilwell Varco. He recruited one of his direct reports, Scott Joji. Scott wanted access to technical information and industry people to help him learn and grow professionally, and Ron wisely pointed him in the direction of SPE membership.
- 3. Carlos Pereira, who also works at National Oilwell Varco as Coring Manager for Latin America, recruited one of his coworkers who also hailed from Venezuela, Teo Rumbos. Carlos told Teo he had been an SPE member a long, long time and that SPE was a good way to get technical updates, find out about new technologies, and keep in touch with other professionals in the industry. Carlos told us: "When people move to the U.S., it's good to tell them about such organizations and how they are a good opportunity for the company. I expect you will see a few more new members in the next couple of months."

We encourage you to tell your SPE success story to people you know who work in the oil and gas industry. If it's your very first time to recruit a new SPE member, you will receive an attractive SPE lapel pin from Headquarters to wear proudly. "Get a member, get a pin" – like these three gentlemen just did.

AUXILIARY

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Date & Time:	11:00 a.m. Friday, April 13
Location:	Steamboat House 8045 North Sam Houston Parkway West Houston, TX 77064
Cost:	\$32 (Checks Only, Please)
Deadline:	Noon, Tuesday, April 10 (Deadlines are Firm)
Program:	History of the Heights Anne Sloan
Contacts:	
	Nancy Hill
nancyhill2444@sbcglobal.net	
	281-435-1619
	Evelyn Earlougher
eear	lougher@comcast.net
_	1-281-419-1328



SPEi Announcement:

The Gus Archie Memorial Scholarship Program is accepting scholarship applications. The program is supported by the Archie Fund of the SPE Foundation and awards an outstanding student who plans to enter a university and pursue an undergraduate degree in petroleum engineering.

For more information about the program visit the link below. The deadline for completed submissions is **30 April**.

The submission process is all electronic, and to apply, students should visit:

http://www.spe.org/scholarships/archie.php



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Using the Dilution Method for Understanding Cleanup of Fracturing Treatments

Speaker:	Dr. Rick Gdanski Shell International Exploration & Production Inc.
Date & Time:	11:30 a.m luncheon Wednesday, April 25
Location:	Greenspoint Club 16925 Northchase Drive Houston, TX 77060
Cost:	\$35 per person preregistered \$40 for walk-ins
Registration: Deadline:	www.spegcs.org Noon, Monday, April 23

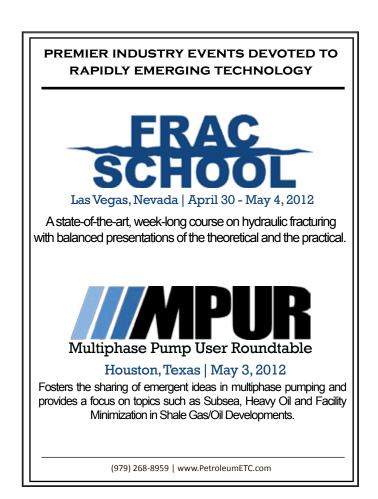
It seems intuitive that propped fracture performance should correlate with fluid recovery after a fracturing treatment. Yet, this is often not the case. However, it has been observed that the dilution profile of the fracturing fluid in the produced water after the fracturing treatment embeds significant information regarding the quality of the resulting propped fracture.

This presentation will demonstrate how the Dilution Method can be used to extract useful information about the cleanup process, the quality of the propped fracture, the recovery of gelling agent, and other interesting observations.



Dr. Rick Gdanski is a Production Technologist in the stimulation fluids group at Shell's Bellaire Technology Center in Houston, Texas. His responsibilities include technology transfer and treatment design in the areas of sandstone and carbonate acidizing, scale squeeze evaluations, and well treatment returns analysis and interpretation. Dr. Gdanski joined SIEP in 2010 after 30 years with Halliburton in the production enhancement section.

Dr. Gdanski holds a BS degree in chemistry from Southwestern Oklahoma State University and a PhD in physical organic chemistry from the University of Illinois. He is a member of the American Chemical Society and the Society of Petroleum Engineers, and has authored numerous technical papers on many aspects of acid stimulations as well as fracture cleanup in tight gas reservoirs. He was an SPE Distinguished Lecturer for the 1996-1997 season and often co-chairs technical sessions at SPE technical conferences.

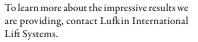




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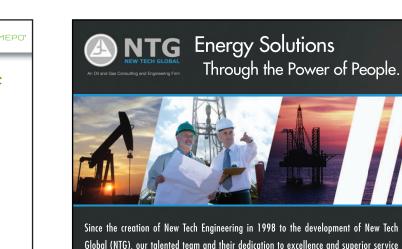


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Oil Patch Orientation

Speakers:	John Farina, Consultant Ron Hinn, PetroSkills Brian Musso, MCX Ken Arnold, Consultant Marty Stetzer, Consultant
Date & Time:	8:30 a.m 5:30 p.m. Wednesday, May 9
Location:	Hilton Westchase Hotel 9999 Westheimer Road Houston, TX 77042
Cost:	\$350 per members \$375 for nonmembers & walk-ins
Registration: Deadline:	www.spegcs.org Noon, Monday, May 7

Outline:

- * Introduction/Outline of the Day
- * The Economics & Future of the Petroleum Industry
- * Theory of the Origins of Hydrocarbons
- * Reservoir Parameters (eg: Porosity/Permeability)
- * Geology of Petroleum & Geophysics
- * Drilling Basics
- * Well Logging
- * Well Completions
- * Reservoir Drive Mechanisms
- * Production Equipment (sub-surface & surface)
- * Midstream & Downstream Topics

This seminar is the most popular SPE-GCS program. The course is designed as non-technical audio-visual guided tour through the oil patch, illustrating the basic equipment and techniques used in the discovery, development and production of petroleum.

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- Basic Geophysics: May 21-25, August 13-17
- Foundations of Petrophysics: June 18-22, August 6-10, July 23-August 3 (Virtual)
- Applied Reservoir Engineering: April 30–May 11, July 9-20, September 10-21
- Drilling Practices: July 30-Aug 10
- Production Operations 1: July 9-20, August 13-24 (Covington, LA), September 24-October 5
- Completions and Workovers: June 25-29, October 1-5

For details on these or our other 250 sessions in the Gulf Coast, contact Patty Davis, (832) 426-1203 or patty.davis@petroskills.com, or see details and full selection at www.petroskills.com

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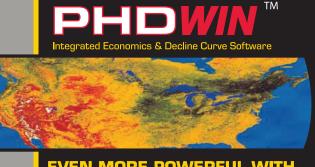
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Data Mining and Predictive Analytics Transform Data to Barrels

Speaker:	Shawn Shirzadi BP
Date & Time:	11:30 a.m luncheon Wednesday, April 18
Location:	Courtyard at St. James 1885 Saint James Place Houston, TX 77056
Cost:	\$35 per members \$40 for nonmembers and walk-ins
Registration: Deadline:	www.spegcs.org Noon, Monday, April 16

BP's Field of the Future Data Analytics program is developing data-driven technologies that complement existing capabilities for reservoir management and operations. Widespread adoption of BP's proprietary wells and equipment real-time surveillance and monitoring applications provides efficient workflows that deliver realtime data to decision makers. Data-analytics applications are transforming these data into information that will improve management of operational risk, increase production, and maximize both resource recovery and workforce efficiency.

This presentation describes the progress made in the areas of operational risk and increased production and outlines future activities. So far, we have created datadriven corrosion-assessment tools and have developed new technology for virtual flowmeters. Corrosion assessment is now able to evaluate the efficiency of our pipeline-inspection programs. Following successful proof of concept and field trials, we will package this capability and deploy it globally as a standard workflow as soon as possible.

We are also developing an innovative approach to diagnose and optimize waterflood performance designated as Top-Down Waterflood Diagnostics and Optimization. This novel approach combines BP's proprietary production event detection and association technology with visualization and parametric models that can quantify the subsurface connections between injectors and the producers. Trials have demonstrated that this complements the conventional waterflood management and optimization workflows. In conjunction with other activities, the benefit to operations is derived from improving sweep efficiency in increasing recovery. Use of data mining and predictive analytics for business intelligence has created significant value in finance, medicine, power generation, and other industries. BP now has an established, active program to bring the business intelligence approach into its E&P operations and particularly to its reservoir management.

Shawn Shirzadi is currently the Data Analytics Program Lead in BP Upstream. Shirzadi is one of the principle inventors of Data Analytics signature capabilities, "Top Down Water Flood" concept and toolkit, which leverages BP's industry leading position in waterflood diagnostics/ prognostics solutions and offers fast data-based capabilities for understanding the efficacy of water-injection activities. In his current role he has doubled the size of his team by bringing specialists from other industries, focusing on data mining, predictive analytics, and artificial intelligence, to grow the data-analytics capabilities in upstream segment. He is currently the Chairman of SPE's Petroleum Data-Driven Analytics (PD²A) Technical Section. He is on the steering board committees of SPE Forums for Artificial Intelligence and Reservoir Management 2020. Shirzadi is an active member of IEEE and American Chemical Society.

Shirzadi has over 25 years of industry experience in oil and gas, mainly focused on waterflood and EOR, and holds BSc and MSc degrees in petroleum engineering from University of Texas at Austin.











Nour

by Buddy Woodroof, ProTechnics Features Editor

April 1997

An extended-reach litmus test is on the horizon, as Benton Oil & Gas receives California state approval to drill as far out as 3.5 miles under the Santa Barbara Channel using an onshore drill site.

- Meanwhile, Conoco receives a permit from the state of Utah to drill on a state lease in Reese Canyon in the Grand Staircase Escalante National Monument on leases Conoco has owned for almost ten years.
- Nymex's first year of electricity futures/options trading exceeded expectations according to Nymex President Patrick Thompson, speaking from the new Nymex office in Houston, which Thompson claims is positioned to become "the hub of the electricity industry."
- Twenty Greenpeace activists scale BP's building in Aberdeen to install a rooftop solar array, purchased from BP, and to erect a banner reading "BP, solar not oil."

Light sweet crude oil - \$19.75/bbl Natural gas - \$1.90/MMbtu U.S. active rig count - 918

April 2002

Despite the slow pace of new contract negotiation and award, and despite the continuance of U.S. sanctions, Libya continues to rank as the country most favored by international oil companies for new exploration and production investment in 2002, according to a recent survey conducted by a UK consultancy.

- Brigham O&G of Austin reports losing surface control while drilling a natural gas development well in Matagorda County, Texas. The well is the first offset to the field's discovery well, the Staubach No. 1 (Could it be "Roger the dodger?").
- China's Sinopec reports plans to build 450 retail gasoline stations with foreign companies this year, as China lifts the ban on foreign investment in the retail fuels business. Ultimately, there will be about 1,500 such stations to be built in conjunction with Royal Dutch Shell, ExxonMobil, and BP.
- A drought on the U.S. East Coast drives up natural gas prices. How you say? The drought has led to the loss of hydroelectric power and has even impacted nuclear power generation, with its reliance on fresh water for cooling.

Light sweet crude oil - \$25.56/bbl Natural gas - \$3.44/MMbtu U.S. active rig count - 749

April 2007

In the first such agreement in the Western Hemisphere, Venezuelan President Hugo Chavez and Trinidad and Tobago Prime Minister Patrick Manning sign an agreement to jointly develop the estimated 30 tcf of natural gas in offshore fields straddling the borders of the two nations.

• Composite Energy, a Scottish company, commissions a 2-yr study to evaluate the potential of methane

production from coal beds, followed by CO₂ storage in the evacuated coal beds, thus taking advantage of the property of coal to typically absorb five times more CO₂ than the methane it releases.

• Chevron and Weyerhaeuser report plans to jointly assess the feasibility of commercializing biofuels production from nonfood cellulose sources. Chevron is deeply involved with biofuels research through alliances with Georgia Tech, University of California at Davis, the Colorado Center for Biorefining and Biofuels, and the DOE.

> Light sweet crude oil - \$62.85/bbl Natural gas - \$7.80/MMbtu U.S. active rig count - 1,758

The Rest of the Yarn

This month we continue our look-back at the life and times of Sid Richardson, one of the "Big Four" oilmen who laid the foundations of a flamboyant lifestyle that would come to define the image of Texas Oil.

While East Texas made fortunes for Murchison, Hunt, and other oilmen, it ruined Sid Richardson. With prices for its high-quality crude driven as low as ten cents a barrel, the majors saw little reason to buy the remote, sulfur-laden West Texas oil Richardson was selling. Cash from his best wells in Ward County shriveled to almost nothing. In January 1930 his income was twenty-five thousand dollars a month; by December, it had fallen to sixteen hundred dollars a month, and the banks took every cent.

In a matter of months Richardson went from the penthouse to the outhouse—literally. He moved out of his top-floor suite at the Blackstone Hotel into a forty-dollar-a-month maid's room. When he couldn't afford that, he moved into a twenty-five-dollar-a-month room at the Texas Hotel; when he couldn't afford even that, he was evicted and sued for back rent, at which point one of his closest friends, Amon Carter, publisher of the Fort Worth newspaper, gave him a room at the Fort Worth Club for free. When he was evicted from his office, Richardson set up business at a downtown drugstore. If he was out, a soda jerk named Jack Collier answered the pay phone, "Sid Richardson's office."

His only hope was to find more oil. Murchison begged him to come to East Texas, but he refused, since all his leases and contacts remained in remote Ward and Winkler Counties on the New Mexico border. He was determined to keep drilling, but his credit at West Texas oil-supply stores was running low. When the inn in Monahans threw him out, he fled to the new hotel in Kermit. When the Kermit hotel threw him out, Richardson resorted to bunking at a ranch outside of town. In desperation he resorted to paying his men with groceries and the promise of an eventual paycheck. During the Depression, poor-boys like Richardson paid drillers and tool-pushers ten to twelve dollars a day in oil. If none was found, they received whatever the wildcatter could come up with. Richardson, who kept a chronically overdue account at the general store in Kermit, became renowned for paying his men in bread, eggs, or milk—whatever they would eat.

Next month Sid Richardson extends his credit to the limit and then finds a new wealthy partner willing to bankroll him. (Article excerpted from "The Big Rich.")

History Quiz

In 2002, how many retail gasoline stations were there in China: a) 75,000, b) 125,000, c) 210,000, d) 260,000?

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

Answer to March's Quiz

The first horizontal oil well was drilled near Texon, Texas in 1929.

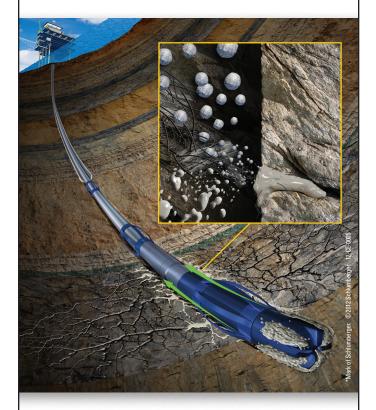
Answer to February's Quiz

In 1959, Texaco overtook Standard Oil of New Jersey as the nation's largest crude producer.

Congratulations to February's winner – David Lindley, Crossroads Energy Partners, LLC!!!



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Annual Drilling Symposium – Preliminary Agenda **Enhancements to Well Control for Offshore and Deepwater Environments** Thursday, April 26 Petroleum Club, 800 Bell Street, 43rd Floor Houston, Texas **Cost:** \$100 per member preregistered \$110 for nonmembers and walk-ins **Registration:** www.spegcs.org **Deadline:** Noon, Tuesday April 24 8:00 am – 8:20 am **Registration and Light Breakfast** 8:20 am - 8:25 am Welcome and opening remarks Jack Colborn, Drilling Study Group Chair 8:25 am - 8:55 am Keynote Speaker - John Rogers Smith, P.E., Ph.D. Associate Professor and holder of Campanile Professorship Louisiana State University Craft and Hawkins Department of Petroleum Engineering 9:00 am - 9:30 am Technology Talk: Halliburton (invited) 9:35 am - 10:05 am Technology Talk: Critical Equipment Supplier (e.g. NOV, Cameron, Hydril) 10:05 am – 10:20 am **Networking Break** 10:20 am - 10:50 am Technology Talk: Baker Hughes (invited) 10:55 am – 11:25 am Technology Talk: Weatherford (invited) Technology Talk: Schlumberger (invited) 11:30 am – 12:00 pm 12:00 pm - 1:00 pm Lunch and Networking 1:10 pm – 2:55 pm **Operator Perspectives – short presentations followed by Q&A session** Moderated by John Rogers Smith **Invited Panelists** Shell, XOM, BP, Anadarko, COP, Hess, Petrobras, Statoil, and CVX 2:55 pm - 3:00 pm Wrap up discussion - Kevin Brady, Publicity Chair 3:00 pm Adjourn

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5 June	Horizontal Well Completions	Sid Banerjee, Aaron Burton

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20–21 June	SPE Deepwater Drilling and Completions Conference, Galveston

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Society of Petroleum Engineers



DRILLING & PRODUCTION WASTE MANAGEMENT

Water Reclamation and Reuse-Advancements to Date and Challenges Ahead

Speakers:	Rick McCurdy Chesapeake Energy
	Roland Moreau ExxonMobil
Date & Time:	11:30 a.m Iuncheon Thursday, April 19
Location:	Petroleum Club 800 Bell Street, 43 rd Floor Houston, TX 77002
Cost:	\$35 per member preregistered \$40 for nonmembers and walkins \$5 for student chapter members
Registration: Deadline:	www.spegcs.org Noon, Tuesday, April 17

Join us for the inaugural meeting of the new Drilling & Production Waste Management Study Group, with an expanded focus to cover handling all upstream oil and gas waste streams cost-effectively. Our first meeting will be kicked off by Roland Moreau, SPE Technical Director of Health, Safety, Security, Environment and Social Responsibility [HSSE SR], addressing "SPE Hot Topics – Water Management." Moreau serves on the Board of Directors of SPE International. He will update us on the ranking of what water use issues require the most immediate attention.

Following that introduction, the main speaker, Rick McCurdy, will present an overview of industry efforts towards minimizing fresh water demand for drilling and hydraulic fracturing through the reuse of produced water and the technologies currently available to help with these goals. The presentation will also cover new technologies being evaluated and regulatory challenges that the industry must overcome. Drinking water is precious, as we know from the drought in Texas, and using millions of gallons of fresh water for fracturing operations will meet with opposition from the public if we don't conserve today.

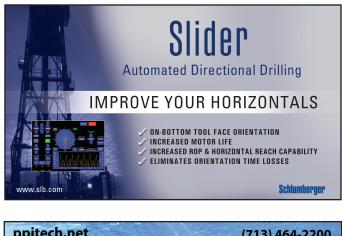
There will also be several door prizes ranging in value from \$50 to \$200.

Rick McCurdy is Senior Engineering Advisor, Chemicals & Water Reclamation, at Chesapeake Energy in Oklahoma City, OK. He is responsible for providing technical support and advice regarding Chesapeake's chemical programs and evaluation of water recovery and conservation technologies throughout Chesapeake's operations. He is also responsible for development of environmentally friendly hydraulic fracturing fluids. Prior to Chesapeake, Rick held managerial positions at BJ Chemical Services in Midland and Alaska.

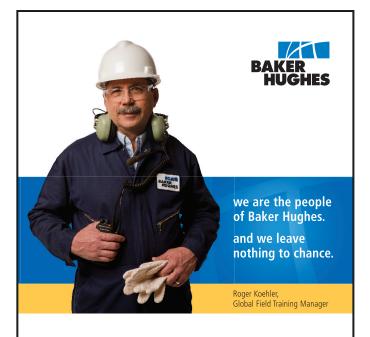
McCurdy has an AAS degree in petroleum technology and is an active member of NACE International and SPE. He has presented papers at meetings for both organizations, as well as the Southwestern Petroleum Short Course.

Roland Moreau is a Safety, Security, Health, and Environment Manager for ExxonMobil's Upstream Research Company. He also serves as Vice President for ExxonMobil Research Qatar Limited in Doha.

Moreau received his BS degree in mechanical engineering from Worcester Polytechnic Institute and an MBA in Finance from Fairleigh Dickinson University. He began his career with Exxon as a Project Engineer at the Bayway Refinery in New Jersey, and since that time has held various technical, supervisory and managerial positions.







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The Austin Chalk vs. Eagle Ford Shale Play

Speaker:	Jason Baihly Schlumberger
Date & Time:	11:30 a.m luncheon Tuesday, April 10
Location:	Greenspoint Club 16925 Northchase Houston, TX 77060
Cost:	\$30 per member preregistered \$35 for nonmembers preregistered \$40 for walk-ins
Registration: Deadline:	www.spegcs.org Noon, Friday, April 6

Please bring a copy of your credit card receipt if you registered and paid online. If you have special dietary needs, please email the event contact with your prequests PRIOR to arrival at the event.

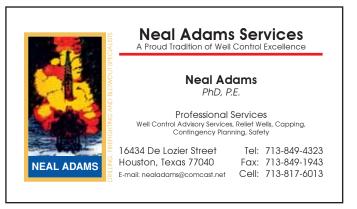
This talk discusses the possibility that the Austin Chalk and Eagle Ford Shale form a single hydrocarbon system. The potential source, generation, migration, storage, and production mechanisms of both formations will be analyzed from a geologic perspective. The implications of this theory for exploiting the Eagle Ford Shale will also be discussed.

From a production standpoint, this presentation will compare the production trends of horizontal wells in the Eagle Ford Shale and Austin Chalk formations, analyzing each in detail to determine if there are any similarities in initial production rates and decline trends. Furthermore, some production analyses will also be undertaken to point out some behavioral trends of the Eagle Ford horizontalwell production profiles.

This presentation investigates the areal extent of production from the Eagle Ford Shale and Austin Chalk formations and discusses their interdependencies. In addition, geological and petrophysical attributes are evaluated to understand this phenomenon. Lastly, the speaker will describe the key mechanism(s) for oil/condensate flow in these oil-producing reservoirs and how to best exploit these unconventional formations. Some discussion will also be centered around how to take lessons learned and apply them elsewhere in the world. **Jason Baihly** is currently the Multi Stage Stimulation Manager for Schlumberger. He was previously in Schlumberger's Consulting group where he led integrated teams performing design, execution, economics, analysis, and optimization of various horizontal and vertical unconventional plays. Baihly is the author or coauthor of more than a dozen SPE papers on drilling, completion, and production aspects of unconventional reservoirs. He has over 10 years of industry experience in several production and completion roles in unconventional gas and oil plays.

Baihly has a BS in civil engineering from the South Dakota School of Mines and Technology and an MSc in petroleum engineering management from Heriot-Watt University in Edinburgh, Scotland.





Production Forecasting in Low-Permeability Oil Reservoirs

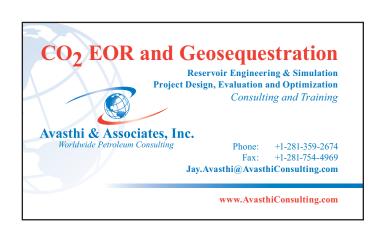
Speaker:	W. John Lee University of Houston
Date & Time:	11:30 a.m luncheon Tuesday, April 17
Location:	Westlake Club 570 Westlake Park Blvd Houston, TX 77079
Cost:	\$35 per member preregistered \$40 for nonmembers preregistered Additional \$5 for walk-ins
Registration: Deadline:	www.spegcs.org Noon, Friday, April 13

Forecasting production and estimating reserves with confidence in unconventional resources, particularly shale reservoirs, is a major unsolved problem in the petroleum industry. Many would prefer a rigorous analytical or numerical model as the basis for production forecasting and reserves estimation, but it is limited by two factors: (1) poor understanding of the physics of hydraulic-fracture stimulation and fluid transport in shales, and (2) unavailability of long-term production histories for shale reservoirs to calibrate the models.

As a result of these problems, most operators in ultra-lowpermeability reservoirs use empirical methods, especially decline curve analysis or type curves based on decline trends, for production forecasting and reserves estimates. The most commonly used method is the traditional Arps hyperbolic decline model coupled with a minimum terminal (exponential) decline rate. This approach, while widely used, has problems.

Much field evidence supports a decline model in which flow is linear in a hydraulically fractured shale reservoir for at least a few years, followed by boundary-dominated flow at the time when interference between adjacent hydraulic fractures occurs. This may be followed by linear flow from the formation beyond the stimulated reservoir volume. Unfortunately, we do not have reliable methods to predict the end of linear flow and the appropriate flow model at this time. Two recent decline models, the Stretched Exponential Model and the Duong Model, can accommodate linear flow and may be able to accommodate flow after the time of fracture interference without resorting to uncertain estimates of formation and fracture properties.

W. John Lee is Professor of Petroleum Engineering and holder of the Cullen Distinguished University Chair at the University of Houston. Lee holds BS, MS, and PhD degrees in chemical engineering from the Georgia Institute of Technology. He worked for ExxonMobil early in his career and specialized in integrated reservoir studies. He later joined the petroleum engineering faculty at Texas A&M, and became Regents Professor of Petroleum Engineering. While at A&M, he also served as a consultant with S.A. Holditch & Associates, where he specialized in reservoir engineering aspects of unconventional gas resources. Lee joined the University of Houston faculty in September 2011. He served as an Academic Engineering Fellow with the US Securities & Exchange Commission (SEC) in Washington during 2007-2008, and was a principal architect of the modernized SEC rules for reporting oil and gas reserves. Lee is the author of three textbooks published by SPE and has received numerous awards from SPE, including the Lucas Medal, the DeGolyer Distinguished Service Medal, and Honorary Membership. He is a member of the US National Academy of Engineering and the Russian Academy of Natural Sciences.



PETRO-TECH

Do You Really Know Where Your Well is?

Speaker:	James M. Stolle TGS Geological Products
Date & Time:	11:30 a.m Iuncheon Tuesday, April 10
Location:	Brookhollow Sheraton 3000 North Loop West Houston, TX 77092
Cost:	\$38 per member preregistered \$48 for nonmembers and walk-ins
Registration: Deadline:	www.spegcs.org Noon, Friday, April 6

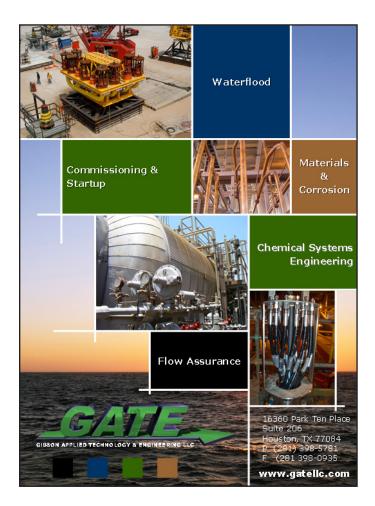
Directional survey data provides critical well-control information on the spatial positioning of drilled wells and their 2D/3D well paths. Geologists, geophysicists, and engineers rely on properly located well paths for their diverse efforts. Very few in these disciplines would recognize the many ways well paths can be located incorrectly. As an interpreter, I was clueless about the issues of well-path positioning.

There are two main issues adversely affecting those that use well-path control. One is the issue of whether the maps or databases being used represent all the drilled well paths/wellbores. Second, are the wells in the right place? It might be better to say, "Are they spatially correct?," as there are also the important elements of depth and elevation that need to be considered. Incorrectly positioned wellpath control can certainly adversely affect the efforts of geologists, geophysicists, and engineers. Care needs to be taken to make sure well-path control is complete and spatially correct. Else, they can also cause expensive, multi-million-dollar mistakes, like drilling wells in the wrong place (sometimes on somebody else's leases), decisions to lease the wrong acreage, and drilling wells that did not need to be drilled. **James M. Stolle** is the Directional Survey Data Business Development Manager for TGS Geological Products. The first half of his career of over 37 years was in exploration and development operations and interpretation, initially as a geologist progressing to geological/geophysical interpreter. Some of the areas of interpretation were onshore and offshore California, offshore Alaska, Nevada, Canada, Rockies, Gulf of Mexico, and the North Sea.

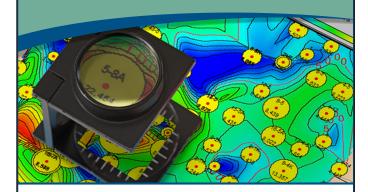
Stolle has led projects building directional survey data in the Gulf of Mexico, onshore So. Louisiana Gulf Coast, onshore Texas Gulf Coast, Texas bays and inland waters, Texas Barnett Shale area, the Haynesville play, and Beverly Hills, California. These projects have resulted in almost 100,000 wells with directional surveys. Directional survey efforts provided an invaluable education on API numbering and particularly on what does and does not work with the current API Well Numbering standard. In 1996, Stolle organized an industry API symposium to review the API number, its function, weaknesses, and needed enhancements. Well data integration problems resulting from API numbers became obvious as did the realization that these problems will not fix themselves. Stolle is currently one of the Co-chairman of the PPDM's steering committee over the effort to rewrite the API D12A Well Numbering standard.

Stolle attended Oregon State University and later Brigham Young University. He received a BS in geology, and subsequently an MS in geology with a specialty in stratigraphy.





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Subsea Produced-Water Treatment Measurement Challenges				
Speaker:	Timothy P. Daigle Fluor Offshore Solutions			
Date & Time:	11:30 a.m luncheon Tuesday, April 17			
Location:	Norris Center City Center 803 Town and Country Lane Suite 210 Houston, TX 77042			
Cost:	\$35 per member preregistered \$40 for nonmembers preregistered \$45 for walk-ins			
Registration: Deadline:	www.spegcs.org Noon, Friday, April 13			

Today's petroleum industry is being confronted with having to manage production with increasing amounts of produced water from production wells. Many engineers throughout the industry believe that good produced-water management is the single most important aspect to extending the life of a producing reservoir. Providing quality measurements for monitoring fluid production in the subsea-processing system will be a critical part of properly managing that production.

With the increasing regulations and changing requirements found throughout the industry, the need for new measurement techniques and more reliable technologies is even more important. This presentation will help identify the major measurement challenges with the implementation of subsea processing. It will highlight the different stateof-the-art measurement principles and technologies that can be used in subsea processing. It will also address the gaps to be filled to improve the confidence in measurement technologies that are needed at specific points in the subseaprocessing system.

This 45 minute presentation will allow the audience additional time for questions and answers on the potentially controversial subject.

Timothy P. Daigle is a Senior Project Engineer within the Subsea Engineering Group of Fluor Offshore Solutions.He is currently splitting his time as the Project Manager for the RPSEA DW3100 Study, Seabed Discharge of Produced Water and/or Solids, and as Interface Manager for the BG Starfish Subsea Tieback Project. Daigle is focused on subsea multiphase metering, subsea control systems, subsea processing and separation, and produced-water treatment, as well as flow assurance.

With a BS degree in industrial technology from the University of Louisiana at Lafayette, Daigle now has 19 years of oil and gas industry experience, primarily with PVT sampling and analyses and well testing using multiphase flow meters. He played a significant role in helping to introduce the multiphase metering technology to the oil field. Daigle has held an advisory board member position with the Multiphase Measurement Roundtable and is a founding advisor for the North American Flow Measurement Workshop. He currently serves on the advisory committee for the 2011 and 2012 ChemInnovations Conference and was also named 2010 Author of the Year for the Fluor Corporation.





RESERVOIR ENGINEERING TECHNOLOGY SYMPOSIUM

	S Tower. 1501 McKinney.	TOPICS nale Oil/Gas Reserves ormation testing EOR
Time	Title	Speaker
8:00	Continental breakfast	
8:15	Introductions / Safety briefing	
	Session 1 Shale Oil/Gas	•
8:30 – 9:00	New Algorithms and Integrated Workflow for Tight C and Shale Completions	Gas Craig Cipolla -SLB
9:00 - 9:30	Probabilistic Reservoir Simulation WF for an Unconventional Resource Play: Bakken case stud	Sunny Luo Iy HESS
9:30 - 10:00	TBA	TBA
10:00 - 10:30	Break	
	Session 2 - Well /Formation testing	•
10:30 - 11:00	Moving from Vision to Reality The State of Optimal Value Testing	Hani Elshahawi SHELL
11:00 –11:30	Mechanistic rate decline analysis in shale gas reservoirs	George Stewart Weatherford
11:30 - 12:00	ТВА	ТВА
12:00 - 1:00	Lunch	
	Session 3 – Reserves	•
1:00 – 1:30	Incorporating Judgment and Transparency Into Reserves Evaluation	Ron Harrell Ryder Scott
1:30 – 2:00	Demonstrating Reasonable Certainty Under Princip Based Oil and Gas Reserves regulations	
2:00 – 2:15	Break	
	Session 3 - EOR	
2:15 – 2:45	Enhanced Oil Recovery Pilot Testing Best Practices	ExxonMobil
2:45 – 3:15	Understanding Foam Flow With a New Foam EO Model Developed From Laboratory and Field Data the Naturally Fractured Cantarell Field	
3:15 – 3:30	Wrap-up	

Meeting Details:

Friday, May 11, 2012 - 8:00AM to 3:00PM HESS Tower 1501 McKinney, Houston, TX 77010

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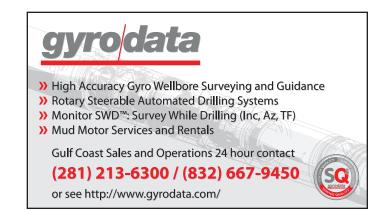
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Registration deadline: Noon, Tuesday, May 8



Field-Development Optimization with Subsurface Uncertainties Michael Litvak **Speaker:** BP Date & Time: 11:30 a.m. - luncheon Thursday, April 26 Location: Courtyard on St. James 1885 St. James Place Houston, TX 77056 Cost: \$35 per member preregistered \$40 for nonmembers preregistered \$45 Walk-ins **Registration:** www.spegcs.org **Deadline:** Noon, Tuesday, April 24

This presentation is an overview of the framework for simultaneous optimization of a broad range of fielddevelopment decisions with subsurface uncertainties.

We optimize discrete and continuous decision variables such as the number of production or injection wells, well locations, perforation intervals, drilling schedules, well rates, etc. As a novel approach, we include additional categorical variables such as depletion strategy, well pattern, or facility size in the optimization process. We consider a limited number of discrete scenarios for each categorical variable (e.g., primary depletion, gas injection, or water injection as three development scenarios). Fielddevelopment constraints on well locations, rig schedules, economic risks, etc. are incorporated in the optimization. Hydrocarbon recovery or some economic indicator can be used as the objective function for the optimization and applied for ranking the field-development options.

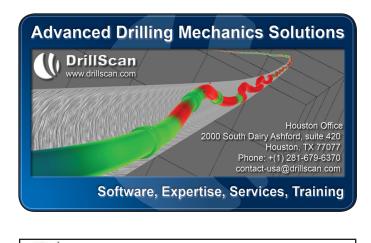
Subsurface uncertainties are represented by incorporating multiple reservoir models in the optimization process. Ideally, all reservoir models in the ensemble should be evaluated for every considered field-development option to define cumulative probability functions. However, this would make CPU demands very large in some cases. We propose two effective approaches to reduce CPU requirements: (1) one reservoir model is run to test the optimization criterion, and the remaining models are only run if the objective function is significantly improved; or (2) a novel application of a statistical proxy procedure to define a subset of the reservoir model ensemble that is run during the optimization cycle.

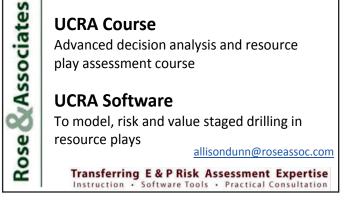
The algorithms have been effectively applied in many fields for simultaneous optimization of well placement, drilling schedule, well production/injection rates, perforation strategy, injection strategy, and facility modifications.

Michael Litvak is a Reservoir Engineering Advisor for BP and has been with BP since 1988. He has over 40 years of experience in the oil and gas industry. Litvak is the developer of innovative technologies for integrated reservoir/facility modeling and fielddevelopment optimization and has successfully applied these technologies in many reservoir studies. He has also offered courses on applied mathematics in Case Western Reserve University.

Litvak has published a large number of papers which established his leading role as an authority in integrated reservoir simulation and field-development optimization.

He holds BS and MS degrees in petroleum engineering and PhD degree in applied mathematics.





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Fayetteville Shale Completions: An Operator's Case History

Speaker:	Jennifer Harpel Southwestern Energy
Date & Time:	11:30 a.m luncheon Wednesday, April 18
Location:	The Westlake Club 570 Westlake Park Blvd Houston, TX 77079
Cost:	\$35 per person preregistered \$40 per person walk-in
Registration: Deadline:	www.spegcs.org Noon, Monday, April 16

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Since 2004 Southwestern Energy (SWN) has completed more than 2,000 wells in the Fayetteville shale with thousands of wells remaining to be drilled and completed. The Fayetteville is a world-class shale play stretching across central Arkansas that encompasses more than 2-million acres. Current SWN gross daily operated production is more than 1.9 BCF/D and as of December 31, 2010, its proved net reserves booked in the Fayetteville were 4.3 TCF.

This presentation will discuss the progression of the completions from the beginning to their current best practices. It will review the different types of completions, stimulation optimization, high efficiency operations and well performance. **Jennifer Harpel** is a Completions Lead at Southwestern Energy. She has worked in the oil and gas industry for 10 years in several disciplines including completions, production, operations and midstream.

Harpel earned a BS degree in geosystems engineering and hydrogeology from the University of Texas at Austin.

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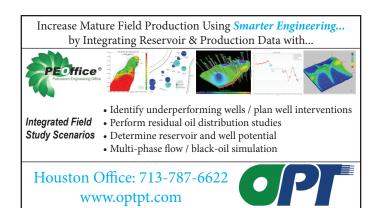


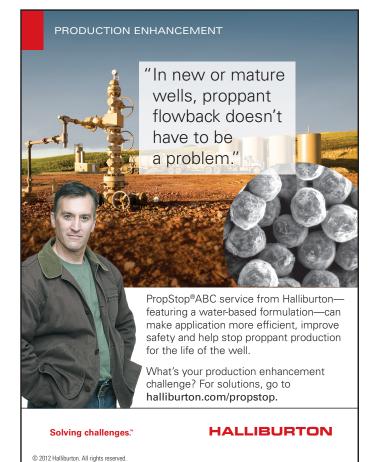




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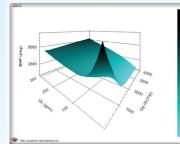


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Worldwide Energy Needs and Supplies

Speaker: Admiral Bobby R. Inman, University of Texas 18 April 2012 • 11:30-1:00PM Empire Room at The Rice, 909 Texas Avenue Houston 77002 Cost: \$20members / \$25 nonmembers

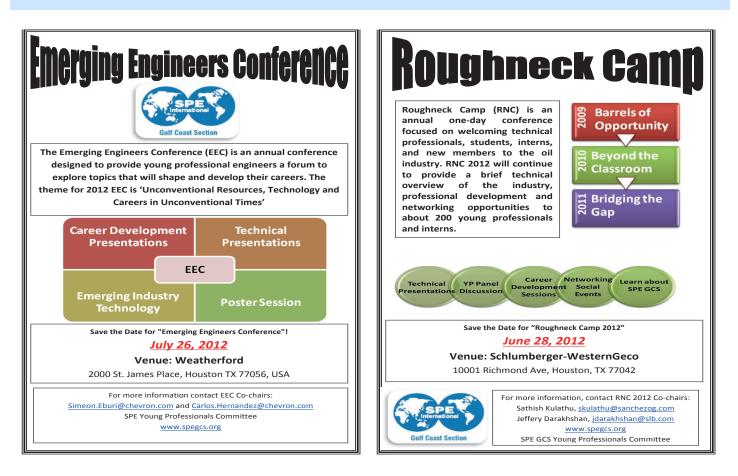
Bringing a unique combination of both public and private sector experience, Admiral Inman will speak to young professionals on various energy-related current events that are molding the future of our industry. Topics may include policy issues such as national security, the impact of geopolitical events, and technological advancements among others.



Admiral Inman graduated from the University of Texas at Austin in 1950, and from the National War College in 1972. He served in the U.S. Navy from November 1951 to July 1982, and retired with the permanent rank of Admiral. While on active duty he served as Director of the National Security Agency and Deputy Director of Central Intelligence

Inman became an adjunct professor at the University of Texas at Austin in 1987. He was appointed as a tenured professor holding the Lyndon B. Johnson Centennial Chair in National Policy in August 2001. He served as Interim Dean of the LBJ School of Public Affairs from 1 January to 31 December 2005 and again from January 2009 to March 2010.

Event contact: Tony Fernandez- TFernandez@nobleenergyinc.com Event Registration: http://www.spegcs.org/en/cev/2267





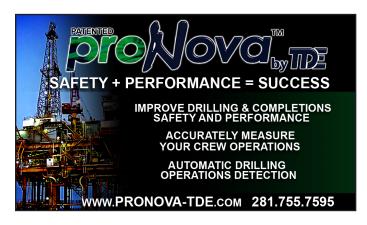
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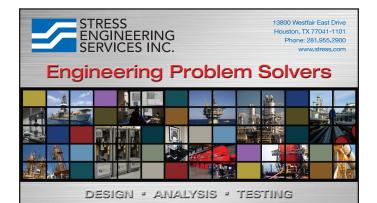
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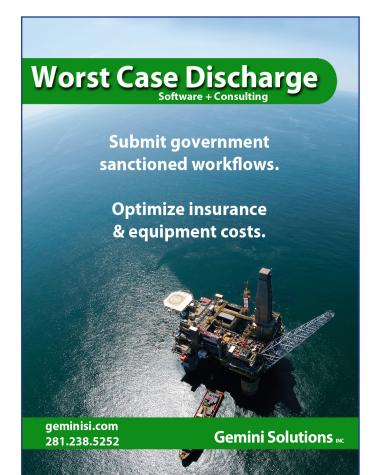
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April Events

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
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8	9	10 Northside, p19 Petro-Tech, p21	11	12 Gen Meeting, p3	13 Auxiliary, p6	14
15	16	¹⁷ Permian, p20 PF&C, p23	¹⁸ Digital Energy, p11 YP, p29 Westside, p27	19 Board Mtg,p4 D&P Waste Mgmt, p17	20	21
22	23	24	25 C & P, p7	26 Drilling, p15 Reservoir, p25	27	28
29	30					