

President's Letter

Welcome to my first President's Letter to the SPEE Membership! I am grateful to be a part of this very prestigious organization and honored to be representing SPEE as the 2014 President.

2013 was a fantastic year for the SPEE, and we owe a lot of our success and continued excellence to our current Past President, **Rick Krenek**. Rick provided our organization with leadership style that embodies the standards and objectives of our organization. He renewed one of the key objectives for the Council of Past Presidents, asking for their focus to review and update the SPEE Long Range Plan. There will be some very positive guidance and steer developing from the collective efforts of our Council of Past Presidents. I remain eager and open minded to new ideas and recommendations made to the Executive Committee during 2014.

I want to recognize our new incoming SPEE Vice President, **Gary Gonzenbach**. In his newly appointed role as Vice President, Gary will host the 2014 SPEE Annual Meeting at the Stowe Mountain Lodge in Stowe, Vermont. Gary has shared some of his early visions, and this one will be another very special Annual Meeting! The Technical Program and Short Courses will be extremely interesting and educational to a broad cross-section of our membership. As always, the social experience will be memorable. Please continue to show your support by planning to attend the 2014 SPEE Annual Meeting. Registration information is available on the website at SPEE.org.

We also welcome a new SPEE Secretary/Treasurer, **Dee Patterson**. Dee was a board member before accepting the appointment to the Executive Committee. During his time as a Board Member, Dee was the Chairman for the Evaluation Parameters Survey. In 2013, the Evaluation Parameter Survey Committee revamped the survey, improving the quality of the survey and the results reporting. Through the years, the Evaluation Parameter Survey has continued to be one of the most successful publications the SPEE generates for the industry. The modernization undertaken in 2013 has given new life to the Survey. The most important part of the survey,

however, is the contribution of members and professionals who complete the survey. I encourage you to respond to the

survey so that we can continue to publish this very important part of SPEE's contribution to the industry.

Every January, the SPEE ExCom and Board of Directors (BOD) convenes in a meeting which carries special significance in that we appoint a new Executive Committee and introduce the new Board Members elected by the membership. I wish to recognize our three new Board Members who have been elected for a three-year term (2014 – 2016): **Jennifer Fitzgerald** (Houston), **Don Jacks** (Oklahoma City), and **Simon McDonald** (Europe). All three of our new Board Members share enthusiasm to contribute to the SPEE and provided significant insights and perspectives during the January BOD meeting. During the Board Meeting, we elected a Director at Large: **Rod Sidle** (Houston). Rod was a Board Member for three years, and has been very impactful with his contributions not only at the Board Meetings, but also with his experience with sister organizations. I also want to recognize our outgoing Board Member, **Allen Barron** (Houston), and thank him for his dedication and contributions over the past three years.

SPEE members should be pleased with a very broad and well-rounded Board who will continue to help guide the growth and prosperity of the organization. Welcome, new Board Members, and thank you to the entire Board for your dedication and contributions.

Originally published in 2010, Monograph 3 has proven itself to be an important and impactful technical publication developed by SPEE for the entire industry. Monograph 3 continues to be coveted by industry professionals around the world, improving our global exposure. With the support



2014 Officers and Directors

Executive Committee

President Samantha Holroyd (Houston)
Vice President..... Gary Gonzenbach (Central Texas)
Secretary-Treasurer Dee Patterson (Dallas)
Past-President.....Richard Krenek (Dallas)

Directors

Jennifer Fitzgerald (Houston) Simon McDonald (Europe)
Brent Hale (Dallas) Floyd Siegle (Calgary)
Don Jacks (Oklahoma City) Curt Taylor (Houston)
Letha Lencioni (Denver) Mike White (Denver)
Rod Sidle (Director-at-Large)(Houston)

Bylaws Committees

Chair of Past Presidents' Council.....Barry Ashton
Qualifications Phil Kandel
Committee: Steve Blair, Tim Gilblom, and Richard Rowe
Nominating Richard Krenek
Grievance David Gold
Committee: Frank Molyneaux and Dan Olds
Reserves Definitions.....S. Tim Smith
Committee: Russ Long, Rod Sidle, Stuart Filler, and John Etherington

Individual Appointments

EthicsTom Collier
Evaluation Parameters SurveyDee Patterson
Fair Market Value.....D. Russell Long
InternetMike White
Membership..... Letha Lencioni
Newsletter Coordinator Richard J. Miller
Communications..... George Schaefer
Production Tax Summary and University InterfaceMarshall Watson
Recommended Evaluation Practices.....Daniel R. Olds
Annual Meeting Advance PlanningBarry Ashton
Professional Registration Marcus Snyder
Monograph 3 - Evaluation of Resource Plays Russell K. Hall
Monograph 4 - Unconventional Developed Reserves John P. Seidle
Technical Training.....Jennifer Fitzgerald
SPE OGRC Oil and Gas Reserves Committee Observer Ron Harrell
JCORET (Joint Committee on Reserves Evaluator Training Rod Sidle
COGEH (Canadian Oil and Gas Evaluation Handbook)..... Robin Bertram
UNECE Expert Group on Resource Classification S. Tim Smith

Chapter Officers - 2014

Calgary

Chairman – Katherine Crerar
Vice Chairman – Doug Wright
Secretary – Floyd Williams
Treasurer – Gary Metcalfe
Membership – Dave Hornung

California

Chairman - Brad DeWitt
Vice Chairman – Rick Finken
Secretary-Treasurer - Barry Evans
Membership - John Davis

Central Texas

Chairman – Jim Bostic
Vice Chairman –
Secretary - Charles Price
Treasurer – Gary Gonzenbach
Membership – Paul Clevenger

Dallas

Chairman - Jack Harper
Vice Chairman – Brent Hale
Secretary - Joe Young
Treasurer - Bill Gross
Past Chairman - Jay Thrash, Jr.
SPEE Liaison - Paul McDonald

Denver

Chairman – Fred LeGrand
Vice Chairman - Steve Enger
Secretary-Treasurer – Andrew Forcina
Membership - John Wright

Europe

Chairman – Martin Hubbig
Vice Chairman – Shane Hattingh
Secretary-Treasurer – Paul Taylor
Membership – Bob Harrison

Houston

Chairman – Anna Hardesty
Vice Chairman – Lucy King
Secretary-Treasurer – Steve Davis
Program Chairman – David Nordt

Midland

Chairman – Robert Green
Vice Chairman –
Secretary-Treasurer – Karl Gulick
Membership Chairman – Russell Hall

Oklahoma City

Chairman – Don Jacks
Vice Chairman - Gary Hunter
Secretary-Treasurer - Fletcher Lewis
Membership - Bruce Heath

Tulsa

Chairman - Marc Schutt
Vice Chairman - Laura Stauffer
Secretary-Treasurer -
Membership Chairman - Phil Schenewerk

Wyoming Chapter Coordinator Scott Stinson



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and cooperation of **Russell K. Hall** (Midland), Chairman of the Monograph 3 Committee, SPEE has actively hosted numerous Monograph 3 courses for the industry, the most recent being hosted in Houston. Monograph 3 Courses will be conducted in 2014 at various venues in the US, to continue to enhance the industry knowledge and understanding about *Guidelines for the Practical Evaluation of Undeveloped Reserves in Resource Plays*.

The Monograph 4 *Estimating Developed Reserves in Unconventional Reservoirs* Committee is headed by long-time member **John Seidle** (Denver). Under John's guidance, a committee of eight industry experts are tackling the challenges of defining developed reserve estimation guidance for unconventional reservoirs. The topics of content range from reservoir characterization, operational aspects of estimating developed reserves, DCA, Analytical Models and Probabilistic Methods. The closing chapter is dedicated to a Summary of Current Technology and commentary on Expected Future Trends. Monograph 4 is under development with targeted publication during the first quarter of 2015.

In 2013, the SPEE ExCom created a new committee: SPEE Training Committee. The objective of the SPEE Training Committee, and especially the Chairperson, is to promote and support quality SPEE Training Courses to be conducted worldwide by qualified SPEE instructors sponsoring the Monograph Publications of the SPEE. I am pleased to announce that new Board Member **Jennifer Fitzgerald** (Houston) has accepted the appointment as the new Chairperson. Jennifer will be busy in 2014 working with Chapters and potentially new chapter regions to coordinate training courses covering Monograph 3. As class schedules develop, they will be posted on the website.

All SPEE members should now be aware of the SPEE website. Hopefully, you have explored the website and find it helpful for accessing resources, getting updates on the SPEE, and connecting with fellow members. We are actively continuing to move towards more efficient communication and administration for the entire membership. Those objectives revolve around the website. Maintenance and continued development options as well as ongoing improvements will be an evergreen project. Our current Internet Chair, **Mike White** (Denver) dedicates a significant amount of time and energy to oversee all aspects of the Internet activity. When possible, please continue to explore the website and familiarize yourself with the optionality for information gathering and membership maintenance you can conduct from your desktop or mobile device.

For those who have placed an order for the SPEE Membership Directory, thank you for your interest. We are working diligently to assure that our records are complete and accurate with respect to membership details and photographs. The SPEE Membership Directory should be printing in the first

quarter, and they will be mailed to members who placed an order as soon as possible. If you haven't had a chance to order your copy, there is still time! Please check on the website (SPEE.org) for more information. This is one of the most memorable and coveted items we prepare for our membership.

Each year, the SPEE membership profile changes. Some of our older members are no longer active in the industry and therefore no longer benefit from membership with SPEE. We also have a continuing trail of new membership applications. The Qualifications Committee tirelessly reviews, processes and approves qualified applications year round. I want to recognize and thank the Qualifications Chairperson, **Phil Kandel** (Denver) and the entire Qualifications Committee for their efforts to screen and process new member applications and their continued dedication to maintaining membership standards while also expediting the application review process. However, we still need help from the broader membership to identify and recruit new qualified members. This is an initiative that needs the collective attention of all members. Who can you identify as our next qualified member?

One of the ways in which the SPEE Executive Committee is working to have a positive impact on membership is the initiation of new Chapters. Two areas have been identified as having local support, sponsorship and industry initiative to garner more attention. The first one is a chapter in the Eastern US. **Dave Wozniak** (Pennsylvania), is SPEE's local sponsor member dedicated to helping create the SPEE US East Chapter. **Dee Patterson** (ExCom, Dallas) is actively pursuing interest for a new chapter to cover the Pacific Rim (Pac-Rim). The focus area for this chapter is Australia. Again, if you know of qualified professionals who would be interested in joining SPEE and creating our new Chapters, please contact Dee Patterson or Dave Wozniak directly.

In closing, I want to thank you for your continued support as a member of the SPEE. I also extend my open door, email and phone policy to receive your comments or questions about our organization.

Samantha Holroyd
President



PLAN AHEAD

SPEE Annual Meetings

- June 7 - 9, 2014 Stowe, Vermont**
Stowe Mountain Lodge
- June 5 - 9, 2015 Halifax, Nova Scotia**
The Westin Nova Scotian
- June 4 - 7, 2016 Lake Tahoe, Nevada**
The Ritz Carlton

Contact Barry Ashton to provide suggestions on locations and venues for future meetings.

Chapter News

Calgary

The Calgary Chapter has completed the Bitumen Guidelines which will be distributed to holders of COGEH Volume III. This update will be distributed in April, 2014.

Draft 14 of the Resources Other Than Reserves (ROTR) Guidelines has been distributed to the Calgary Chapter membership and interested parties for review. The deadline for this review period is February 21, 2014 and no additional feedback will be considered after that time. SPEE (Calgary Chapter) has an agreement with the Alberta Securities Commission (ASC) to publish the ROTR Guidelines on or before June 30, 2014.

The SPEE (Calgary Chapter) has agreed to submit CGF (Chief Geophysical Forum) Reserves document on Geophysical Applications – Using Geophysics for Reserves and Resources Classification and Assessment prepared by the Canadian Society of Exploration Geophysicists for review by its membership. Pending this review, the document will be distributed to holders of COGEH Volume II as an Appendix.

The Chapter meetings continue to be held the third Tuesday of every month. In December, 2013 we were very pleased to award an Honourary Lifetime Membership to Dr. David Elliot for his long service and valuable contribution to SPEE.

Meetings - 3rd Tuesday of each month except June, July and August. Membership - 55

California

The California Chapter met in a virtual meeting during November. One of the main topics of discussion was the desire for continuing education on various aspects related to oil and gas valuations and reserves determinations. The discussion was not only specific to California but also included the Chapter members' desire to encourage SPEE as an organization to participate on a membership-wide level. Regarding annual ethics updates, the Chapter formed a subcommittee to explore methods to meet the Chapter members' needs who cannot attend the Annual SPEE meetings.

Also discussed was the upcoming California Assessors Association's conference of the Petroleum Standards Advisory Committee (PSAC). The conference is an annual joint effort between PSAC and industry participation through the Western States Petroleum Association (WSPA) and the California Independent Petroleum Association (CIPA). The conference will be held February 13-14, 2014 in Oxnard California and will discuss information relative to the 2013 annual assessments for ad valorem property tax purposes of

oil and gas properties, refineries, and co-generation facilities.

California's Senate Bill 4 proposed regulations on well stimulation (hydraulic fracturing and acidizing) was also briefly discussed with a plan to follow up to Chapter Members with a more detailed summary of the regulations and the Bill's potential to affect oil and gas appraisals in California.

Membership - 22

Central Texas

No activity in the chapter since the August newsletter.

Membership – 33

Dallas

The September meeting was held on Thursday, September 26, 2013. The speaker was Dilhan Ilk with DeGolyer and MacNaughton. The speech was titled *Well Performance in Unconventional Reservoirs – State-of-the-art Analysis/Interpretation, and Models*. We used the SPEE online reservation system with great success. We had 54 people in attendance.

The November meeting was a joint meeting with the Dallas SPE chapter held on Thursday, November 7, 2013. The speaker was Tom Schob with LaRoche Petroleum Consultants. The speech was titled *Professional Ethics and Leadership*. This met the ethics requirements for the attendees who are registered professional engineers. The total attendance for this meeting was 76.

The January meeting was held on Tuesday, January 14, 2014. The speaker was Alan Farquharson with Range Resources. The speech was titled *Discovery and Development of the Marcellus Shale*. The total attendance was 46.

Meetings – Bimonthly from September through May at the Brookhaven College Geotechnology Institute. Membership – 58

Denver

On October 9, 2013, the Denver Chapter held its fourth quarter meeting of 2013 with 55 in attendance including 21 members and 34 guests. Mr. Matt Lepore was the speaker and spoke on the topic *The Current State of Colorado's Oil and Gas Regulatory Environment*.

Mr. Lepore is the current Director of the Colorado Oil and Gas Conservation Commission (COGCC). A Colorado Native, Mr. Lepore graduated summa cum laude earning a B.A. from University of Colorado, Boulder in 1987 and earned a

JD from Stanford University in 1993. Prior to his position at the COGCC, Mr. Lepore practiced law with Beatty & Wozniak, a boutique energy law firm. He also served as the Colorado Assistant Attorney General and was counsel to the Oil and Gas Conservation Commission. Prior to his tenure with the Attorney General's office, Mr. Lepore was a partner in a large Denver-based regional private practice, where he specialized in environmental and energy law, including tort litigation, compliance counseling, and liability risk assessment for business and property transactions. Mr. Lepore was Chair of the Colorado Bar Association Environmental Law Section in 2011-2012.

Mr. Lepore spoke on local and state issues affecting oil and gas exploration and development in Colorado. He addressed issues on regulating various aspects of exploration and development, and ways specific jurisdictions such as Boulder and Arapahoe County have tackled these issues. Mr. Lepore also discussed briefly the regulation of siting locations, surface access, road and location construction, access to water, makeup and produced water management, atmospheric emissions, noise management, pooling, exploratory units, wellbore density, and wellbore construction.

On November 13, 2013, as a service to chapter members, the chapter held scenario discussion on ethics topics. The discussion was led by chapter officers Andrew Forcina and Fred Legrand. The presentation was designed to meet the requirements of various state licensing boards as well as the SPEE annual renewal requirement for one hour of ethics study. Total attendance was 31, of which 25 were members and 6 were guests.

Meetings – 2nd Wednesday of first month of each quarter – Denver Athletic Club – The New Petroleum Club. Membership – 62

Europe

Meetings - Four per year. Membership - 28

Houston

On Wednesday, September 4th, Randy Newcomer from Riverbend Oil & Gas presented *E&P Capital Sources and the Industry Partner*. Randy discussed the impact of technological advancement on E&P capital spending. Although the type of development drilling and acquisitions has changed over the last several years, he presented how they will still be a large part of the E&P industry over the next several. There were 38 members, guests, and visitors in attendance.

On Wednesday, October 2nd, Elliott Young from BHP Billiton presented *Reserves Entitlement and Reporting*. Elliott presented a discussion on the various reserves entitlement and reporting scenarios under different fiscal systems. He discussed the key elements that enable reserves to be reported and the approaches for determining reportable amounts for

various agreements. There were 37 members, guests, and visitors in attendance.

On Tuesday, October 29th, the Houston Chapter hosted a Monograph 3 Short Course led by instructor Russell Hall. The one-day course introduced concepts and procedures for performing reserves evaluations of Resource Play assets as covered in SPEE's Monograph 3. Russell presented a comprehensive overview and engaged the attendees with several exercises. The short course was a great success with 40 attendees. Attendees included members and non-members from across the country.

On Wednesday, November 6th, Marcial Nava from BBVA Compass Bank presented *U.S. Energy Revolution, Implications for the Economy*. Marcial presented a discussion on the U.S. energy revolution and its implications for the U.S. economy. He discussed the impact labor markets, industrial production, fiscal revenues, geopolitics, capital expenditures and regional growth. He also provided insight on some of the uncertainties surrounding the outlook for the oil and gas industry. At this meeting Anna Hardesty, Lucy King and Steve Davis were placed in nomination by the current officers for Chairman, Vice Chairman and Secretary-Treasurer, respectively. A request was made for nominations from the floor but none were received. The announcement was made that the voting on the officers would occur at December's meeting. There were 41 members, guests, and visitors in attendance.

Meetings – 1st Wednesday of each month except June, July and August – Houston Petroleum Club. Membership – 188

Midland

The chapter held three meetings in the second half of 2013: July, September and November.

The July meeting featured Dr. Marshall Watson, Past President of SPEE; Department Chairman of the Bob L. Herd Department of Petroleum Engineering, Texas Tech University. Marshall presented the changing face of TTU Petroleum Engineering, including the curriculum changes and the construction of a completely new facility. The meeting was well attended with 44 persons present.

The September meeting featured Dr. Fred C. Beach, Assistant Director for Policy Studies, The University of Texas at Austin Energy Institute, Cockrell School of Engineering & McCombs Business School. Dr. Beach presented *Oil & Water: One Element of 'The Energy Water Nexus.'* Due to changing the meeting date to accommodate Dr. Beach we met two weeks later and on a Tuesday instead of a Wednesday. Our attendance fell to 30.

November's meeting hosted Richard Mason, Chief Technical Director, Upstream, Hart Energy. Richard presented a program titled *Mississippi Lime, What's in Store for Texas*. Again we moved the meeting date to accommodate the speaker and had 30 in attendance.

The New Year 2014 was back on course with over 50 in attendance for our January meeting and a two-day short course scheduled in February featuring Dr. John Lee teaching *Production Forecasting For Unconventional Resources*. This event was co-hosted and supported by the Midland College, Petroleum Professional Development Center. Update: we had 38 students attend our Short Course and it was well received by all. Dr. Lee suggested we should do it again.

The Midland Chapter meetings are scheduled bimonthly starting in January on the 2nd Wednesday of the month. They are held in the Petroleum Club of Midland at 11:30 AM and features a sit-down plate served luncheon.

Meetings – 2nd Wednesday odd months – Midland Petroleum Club. Membership - 26

Oklahoma City Chapter

During the second half of 2013, Vice Chairman of Programs, Gary Hunter of Ward Petroleum, provided the following programs for our members:

On September 27th, the OKC SPEE Chapter hosted SPEE member Dee Patterson, Managing Director of Moyes & Company and learned about the *2013 Survey Parameters Used in Property Evaluation*. Dee gave an extremely thorough review of the annual statistics gathered and analyzed by SPEE each year. Attendance was 39 members and guests.

On October 24th, the OKC SPEE Chapter hosted Darrell Noblitt, founder of Noblitt Oil & Gas, and he presented an ethics talk entitled *Are You a Wolf, a Sheep, or a Sheep Dog?* Darrell gave members his perspective on the roles and responsibilities of oil and gas professionals to protect the integrity of our industry. Attendance was 27 members and guests.

On December 12th, the OKC SPEE Chapter hosted Bret Jameson, Vice President of Devon's Anadarko Basin Business Unit, and learned about the *Devon Energy – Company Overview and Strategy*. Bret gave members a view of Devon's recent transactions and corporate strategy. Attendance was 31 members and guests.

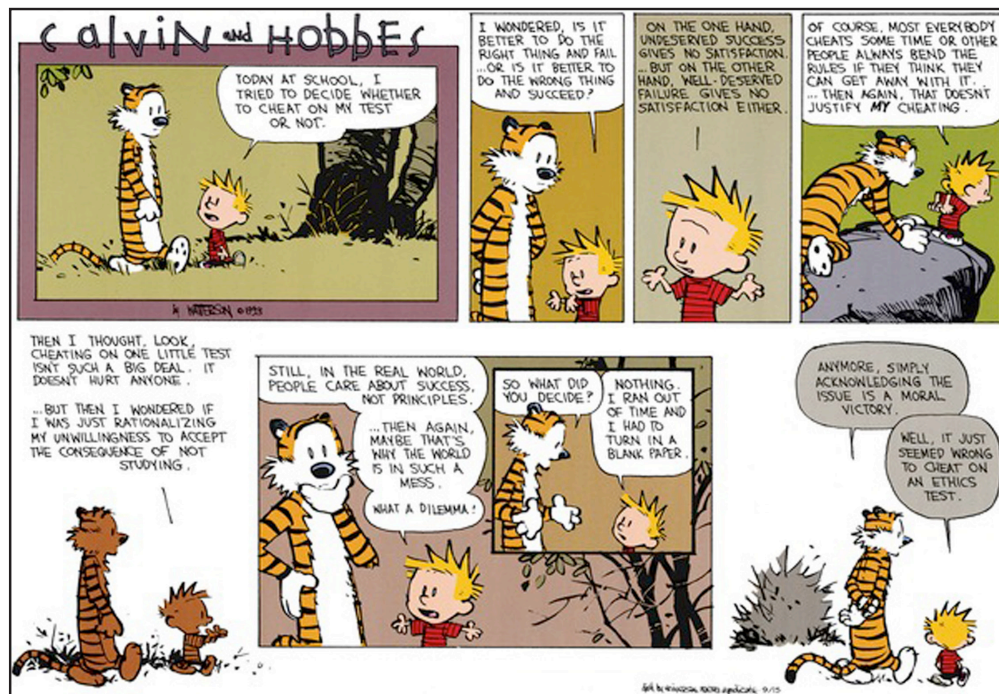
Meetings – Every odd-numbered month. Membership - 24

Tulsa

JP Dick of Pinnacle Energy Services presented to the Tulsa SPEE chapter on September 17, 2013. He is the founder and manager of Pinnacle which provides reserve and economic evaluations, regulatory expert testimony, well and field reviews, and various reservoir and operations analyses to numerous clients concerning primarily Mid-Continent oil and gas activities. JP presented numerous completion and production statistics from the horizontal Mississippian Lime play which helped shed light on the variability of the play. Thirty-eight people were registered for the talk.

Member Chris Jacobsen of Premier Natural Resources presented to the Tulsa SPEE chapter on November 19, 2013. He is the co-founder and Chief Executive Officer of Premier Natural Resources, an independent oil and gas company formed after the January 2006 acquisition of Vintage Petroleum by Occidental Petroleum. Prior to forming Premier, Chris was Vice President of U.S. Operations and Exploitation for Vintage. Chris discussed his company's relationship with KKR which has allowed them to quickly expand their business. Premier currently operates 1200 wells in Texas, Louisiana, and Mississippi. Thirty people were in attendance.

Meetings – Tuesday of each month – Petroleum Club. Membership – 23





The **51st Annual SPEE Conference** is taking place at Stowe Mountain Lodge in the picturesque town of Stowe, Vermont. This six-story, 300-room luxury resort boasts the largest spa in New England and the #1 golf resort in the Northern US.



CONFERENCE HIGHLIGHTS:

- ♦ Saturday Golf Tournament
- ♦ Sunday Afternoon Short Course: "Evaluation of Unconventional Reservoirs"
- ♦ Sunday Welcome Reception
- ♦ Monday Moonlight in Vermont Awards Banquet and Dance
- ♦ Guest & Group Activities
- ♦ Tuesday Afternoon Short Course: "Shale Asset Management"



Registration brochure and materials will be mailed March 7th. For additional information about the conference, Stowe Mountain Lodge, and to make your hotel reservation, please go to **www.spee.org**.

The Ethics Column

I had the opportunity to write a book on reservoir engineering which (based on reviewing my royalty payments) very few, if any, of you have read. Excerpts like this one are permitted and I think make sense in the context of an ethics column. I hope to contribute a few more articles relating to expert testimony as it relates to ethics.

The Engineer as an Expert Witness

There is an old joke about experts. The definition of an expert is broken down into two parts, “ex” meaning a *has been* and “spurt” meaning a *drip under pressure*. In fact, “expert” refers to having specialized skills and expertise that enable others to rely on the engineer’s efforts and his opinions. Engineers and specifically reservoir engineers are called on as experts under a number of circumstances to provide expertise, recommendations and testimony. These might include recommendations before a regulatory body, as testimony in litigation, in arbitration or mediation or before government agencies promulgating regulations or investigating. In each case, the engineering testimony may ultimately sway major decisions whose financial impact on his employer or client could dramatically exceed the value of purely technical recommendations. No matter how intelligent, well educated and published an engineer might be, it is his or her credibility and communication skills that are most valuable in the role of expert.

Because the credibility of an expert witness is of absolute importance, a few ethical issues for engineers are worth revisiting. The engineer as expert witness never testifies beyond his area of expertise. It is hard to overstate the importance of this fact. Some engineers may be tempted to do *too much* stretching their real expertise for a variety of reasons. Similarly, some experts tend to become advocates for the party they *represent*.

The vast bulk of reservoir engineering expert testimony is in litigation matters. Far more lawsuits are filed than there are arbitration cases or even contested regulatory hearings. In lawsuits there may be one or more plaintiffs and one or more defendants. Each side may hire a host of experts in a wide variety of areas. The reservoir engineer as expert is often asked to opine about his interpretation of facts, his view of whether or not certain actions or failure to perform certain actions rose to certain (often legally defined) standards. He may be asked to estimate reserves (whether proved, probable, possible or some other definition) and the value of a certain property. He is often asked to estimate the quantity or value of recoverable hydrocarbons were or are under certain leases and what the impact of various actions might have been. He can be asked to hypothesize within his area of expertise and estimate values under alternative scenarios. I was asked to opine as to what the level of understanding of reservoir heterogeneity and its impact on recovery was in the early 1930s!

None of these opinions are being rendered at random. Each tends to be a part of a strategy by one side to prevail over the other (or at least minimize some of the damages). There is something very important for engineering experts to recognize. Your job as an expert is not to be an advocate for your side! Your job is to use your expertise to present clear and compelling testimony that the conclusions you have reached are correct. The most important part about serving as an expert witness is to tell the truth. The way a reservoir engineer understands an oil and gas system may mean that explaining what the truth is to non-experts may require analogies or simplifications. But the essential thing is to never stray from the truth.

Your job may well include pointing out factual and technical errors made by *the other side*. There are definite risks in doing this. The expert runs the risk of losing his own credibility if he is perceived to be an advocate. Few things diminish an expert’s perception of independence than repeated or ad hominem attacks on the work of other experts, no matter how well deserved.

When consultants are hired as independent experts they are usually retained by the attorneys representing the client. Remember that you don’t *represent* the client. The attorneys represent the client and they will not be under oath during your testimony. Even if you are testifying on behalf of your employer as an expert, you must be able to withstand questioning by opposing counsel as to your credibility and your conclusions. It is not uncommon for counsel to suggest that since you owe your livelihood to your employer that you would be willing to say or do anything to help them avoid a highly negative outcome in the litigation matter and the resulting *stain* on your career. You will need to be able to assert your non-negotiable commitment to the truth in a convincing manner.

There are several occasions in which a reservoir engineer might be called on to testimony (usually by deposition but also at trial) in a capacity other than as an expert. Fact witnesses testify as to actual facts that they have knowledge of and do not render opinions. Opposing counsel may well try to solicit expert opinions from a fact witness who is not obligated to provide them. Company employees are often called on to answer questions (interrogatories) on behalf of their employer and to testify about certain records.

Junk Science

Engineers as experts must utilize well established and accepted scientific and engineering principles in reaching their expert conclusions. *Junk science* should be rejected by the Judge and not permitted before jurors. Examples that might suggest unacceptable testimony include:

- Testimony about a methodology that is not based on peer reviewed and published methods,
- Testimony about a methodology whose error rate cannot be estimated,
- Testimony about a methodology that can't be tested according to accepted scientific principles,
- Testimony about a methodology that is not generally accepted by the scientific community.

A methodology that has only been used in other lawsuits would be particularly suspect. While various legal issues in the United States are at play, the challenging of an expert's testimony under this general header is often called a *Daubert* challenge or a *Frye* test, the former becoming more commonplace.

Sophisticated courts globally are adopting similar rules to preclude speculative technology and pseudoscience. The judge is usually the sole determinant of the success of a Daubert challenge. An expert engineer who loses such a challenge may not be able to testify again as an expert witness as opposing counsel will invariably bring up how the expert's testimony was "thrown out for being junk science in such and such a case." While there are few cases in which an expert will want to hire his own counsel, a serious Daubert challenge may well be one of them.

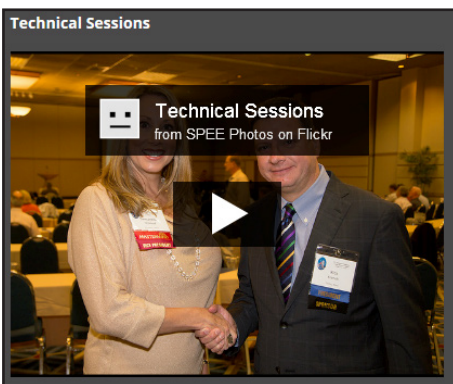
¹Daubert is pronounced "daw" like the first syllable in daughter and "burt" as in Bert and Ernie, the two reservoir engineers of Sesame Street fame. Don't assume a French pronunciation in this case.

D. Nathan Meehan, Ph.D., P.E.

News You Can Use from Your Internet Committee

The Internet Committee is comprised of SPEE members Mike White and Jennifer Fitzgerald plus part-time employee Kemper Dotson. In this article series of *News You can Use*, the Internet Committee, IC for short, covers useful aspects of your SPEE website. The address of the SPEE website is www.spee.org.

The IC has recently added slideshow photostreaming capability to the SPEE website. A streaming slideshow can be added to any page. Currently, three streaming slides are embedded in the 2013 SPEE Annual meeting retrospective page. To view it, click on menu item *News* and then on the right bar, *2013 Annual Meeting Recap*, then on *2013 Annual Meeting Photos*. Photos are grouped into three galleries or slideshows. Click on the start triangle (play) button to begin streaming. Photos are expandable to full screen and are of exceptional quality. The photographs actually reside in a Yahoo Flickr account and are "photostreamed" onto the designated SPEE website page. You can open a Flickr browser tab easily by hovering your mouse close to the top of any picture and click on *SPEE's Photos' Photostream*.



Should you desire a personal digital copy of a particular photo with full pixel count, create your own Flickr account (it's free). Once logged into Flickr, search on the group named *2013 SPEE Annual Meeting*.

Many of these photographs were taken by SPEE member Richard George, and he has graciously made them available to the membership.

Other SPEE-sponsored events both at the Chapter and International level may also be appropriate for Photostream

retrospectives on SPEE.org. Please contact the IC at info@spee.org with your suggestions.

While we are on the topic of photographs, SPEE is in the process of graphically laying out an updated membership directory. The last time the directory was printed (in 2009), photo participation was 83%. SPEE currently has photos for about 75% of its members and would like a higher participation level. If you do not have a photo on file, please email a digital photo to the IC at info@spee.org for inclusion. If you know your photo on file is rather dated, please consider sending a more current representation of yourself. And if you would prefer to mail a physical picture of yourself rather than send it by email, please mail it to B.K. Buongiorno.

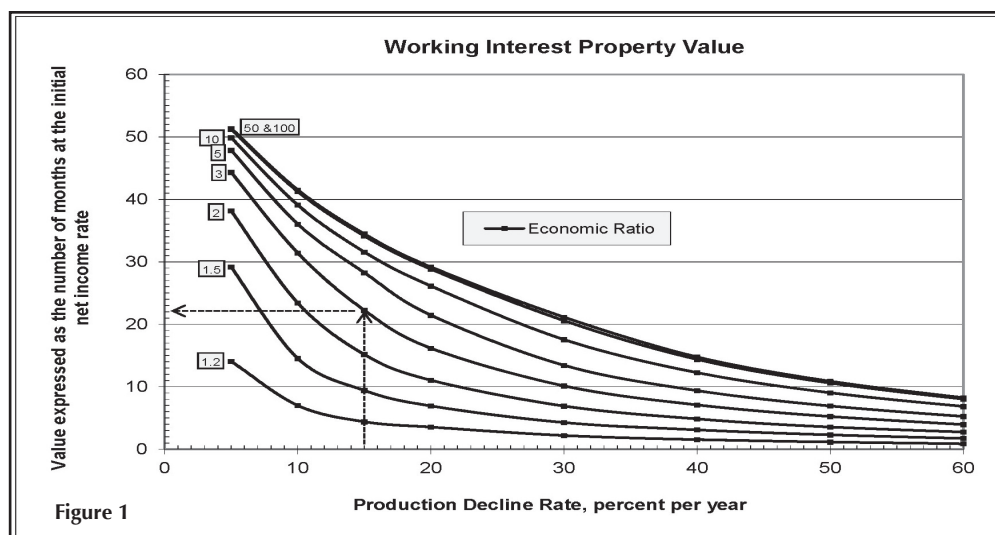
In closing, for many, year-end is a busy time. If you have forgotten to renew your SPEE membership for 2014 and you normally pay the \$120/year rate, you may still renew and pay dues online. Since it is past 1/31/2014, late fees will be assessed, but they are automatically added in. Click on ****2014 DUES**** on the menu bar and the system will prompt you to log in. If you normally pay a different amount or if you would rather fill out a dues invoice by hand, simply go to the same place, ****2014 DUES**** on the menu bar, click on *2014 Membership Dues Form (PDF)*, and print the downloadable form. IC at your service.

Jennifer and Mike



Income Multiples and Fair Market Value

For a variety of reasons, the question often arises as to how the monthly income rate from the ownership of an interest in an oil and gas producing property relates to the market value of the ownership. The graphs of Figure 1 (working interest ownership) and Figure 2 (royalty interest ownership) illustrate those relationships based on many simplifying assumptions. Each of the figures has the production decline rate as the x-axis, and as intuitively expected, as the decline rate increases the income multiple representing value decreases.



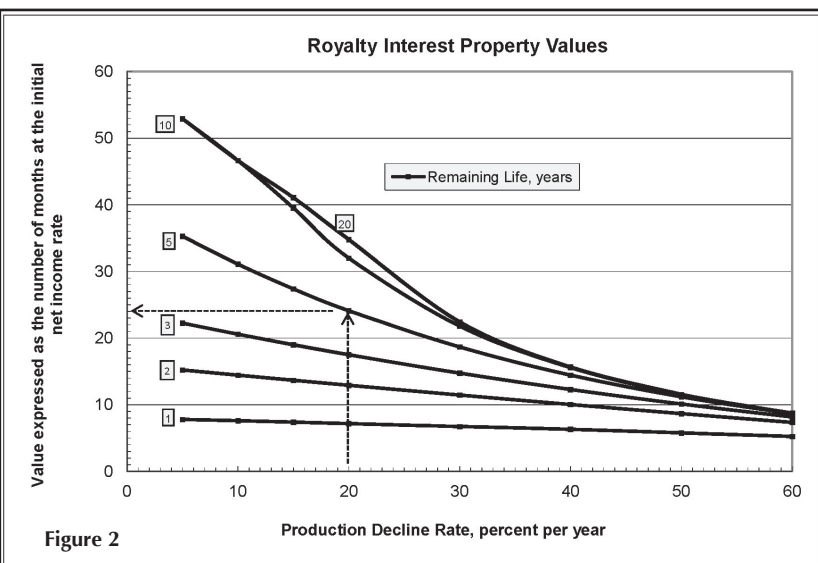
For both working interest and royalty interest properties the decline rate and income rate at the date of evaluation can usually be estimated. From information available on working interest properties, one can usually determine the ratio of income to expenses. Valuations of royalty interest ownership usually requires some means of estimating the remaining life of the production because of a lack of knowledge of the cost of operations or the net revenue positions of the working interest owner. Figures 1 and 2 have thus been prepared using those parameters to relate value to net income rate.

The purpose behind preparation of the graphs of Figures 1 and 2 is to illustrate how widely the appropriate multiple can vary using simple assumptions – constant prices, constant secondary stream ratios, constant monthly operating costs (no production-rate related costs), exponential production declines, no capital expenditures, and no inflation. It is

sometimes possible to use the graphs to approximate value. A solution for a working interest ownership where the production decline rate is 15 percent per year and the ratio of sales revenue to expenses is 3, is shown on Figure 1 to have a value of 22 times the monthly net income rate. A solution of 24 times the income rate is illustrated for a royalty ownership where the production decline rate is 20 percent per year and the expected remaining life is 5 years.

The values in the graphs were taken from production and cash flow projections made using an array of production forecast parameters. From each of the projections, a value was selected as being representative of fair market value and used to generate the figures. The criteria for the selection of the value were the lower of the following from each projection.

1. Present worth of the 18 percent discounted cash flow for working interest ownership or the 12 percent discounted cash flow for royalty ownership (minimum rate of return)
2. Two thirds of the undiscounted cash flow (minimum return on investment)
3. Cumulative cash flow at the end of the first 5 years (maximum payout time)



Initial Net Income Rate as used in the preparation of Figures 1 and 2 is the instantaneous rate at the effective date of the valuation and being the revenue from sales less operating costs (if applicable) and state and local taxes. For the working interest ownership the *Economic Ratio* is the revenue from sales, less state and local taxes, divided by the operating cost exclusive of state and local taxes.

D. Russell Long

Welcome New Members

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The new SPEE Membership Directory is available for purchase and payment on the website - www.spee.org. The cost is \$55.00 plus shipping. The directories will be available end of 1st Quarter 2014.



Membership Applicants

The following member applicants have been processed by the Qualifications Committee. The by-laws require that names be presented to the membership for at least 30 days as a pre-membership requirement. Any member with an objection should address the objection to the Executive Committee (see by-laws regarding other important details) since the applications have already passed through the Qualifications Committee.

APPLICANT	SPONSOR	APPLICANT	SPONSOR
Castilleja, Sylvia H. H. J. Gruy and Associates, Inc. 333 Clay Street, Suite 3850 Houston, TX 77002	Jim Haag Robert Rasor Marilyn Wilson	Trimble, Stephen Carl Trimble Engineering Associates Ltd. 2200, 801 6th Avenue SW Calgary, Alberta T2P 3W2 Canada	Charlie Chapman David Elliott Ron Pacholko
Davis, Jr., James Thomas DeGolyer and MacNaughton 5001 Spring Valley Rd, Suite 800 East Dallas, TX 75244	Charles Boyette Gary McKenzie Jake Walker	Walker, Gregory James Talisman Energy 2000, 888 3rd Street, SW Calgary, Alberta T2P 5L5 Canada	Mike Adams Mark Ireland Rick Krenek
Monson, Kenneth Nels Exxon/Mobil Corporation 16676 Northchase Drive Houston, TX 77060	Cheryl Collarini Edgar Neal Howard Mitch Reece	Wilhelm, Jason Kevin IHS 2000, 540 – 5th Avenue SW Calgary, Alberta T2P 0M2 Canada	Barry Ashton Gary Metcalfe Floyd Siegle
Quinn, Patrick Senergy GB Ltd Ternan House, North Deeside Road Banchory, AB31 5YR United Kingdom	Gordon Adamson Bob Harrison Joel Turnbull	Woofter, Michael Bland Paramount Resources Ltd. 4700 Bankers Hill West 888 3rd Street SW Calgary, Alberta T2P 5C5 Canada	Keith Braaten Harry Jung Phil Welch
Simmins, Audrey Joan Merivale Scotia Bank 2000, 700 2nd Street, SW Calgary, Alberta T2P 2W1 Canada	Jodi Anhorn Katherine Crerar Harry Jung		
Smith, Craig W. Triangle Petroleum Corporation 1200 17th Street, Suite 2600 Denver, CO 80121	Jeff Clampitt Steve Gilbert Fred LeGrand		