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2013 - 2014**

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# SPWLA - Houston Chapter News

## October, 2013



## Luncheon Meetings

<b>Northside</b> <b>Mon, Oct 7, 2013</b> <b>The Greenspoint Club</b>	Eagle Ford completion optimization using horizontal logs  Presented by Robin Slocombe, Schlumberger.
<b>Downtown</b> <b>Tues, Oct 15, 2013</b> <b>Kinder Morgan</b>	Comparison of Grain size, Pore throat and Permeability from Wireline and High Resolution LWD data  By Nicholas Harvey, Harvey Rock Physics Pty Ltd
<b>Westside</b> <b>Wed, Oct 9, 2013</b> <b>BP Plaza Westlake 4</b>	NMR Logging for Characterizing Unconventional Source-Rock Reservoirs  Presented by Songhua Chen, Halliburton Energy Services

## Local SPWLA Upcoming Events

**Houston SPWLA Technology Show**  
**December 9, 2013 10 am - 2 pm**  
**Kinder Morgan, Downtown**  
Event Sponsors needed, contact **ZHIPENG (Z) LIU** [treasurer@spwla-houston.org](mailto:treasurer@spwla-houston.org)

**55<sup>th</sup> Annual SPWLA Symposium**  
**June 22<sup>nd</sup> to 26<sup>th</sup>**  
**Abu Dhabi, UAE**

[Complete Calendar of Events](#)

# President's Corner

*October, 2013*

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*Dear Chapter Members,*

Well the 2013-2014 speaker luncheon season is now under way and we have had excellent speaker sessions at all three chapter locations during September. The Northside presented a talk on improving the accuracy of dip picking from borehole images, delivered by Zhipeng Liu with Kinder-Morgan. The Westside presented a talk on recognizing and accommodating for the effects of core expansion on saturation calculations, delivered by Scott LaPierre with Pioneer Resources and Downtown presented a talk on the relationship between CEC and Boundwater delivered by Andy May with Kinder-Morgan. All the speaker sessions were well attended and I would like to thank all those who participated in kicking off this year's season in style. We are also going through a few changes in locations for our Westside and Downtown sessions. On the Westside we have now moved to a permanent new home in Westlake 4 on the BP campus. This new room is more spacious, quieter and allows all attendees and unobstructed view of the presenter and the presentation screen. For Downtown we are still working on venue locations and we have received considerable help and support from Kinder Morgan and I would like to thank Kinder Morgan and also BP, Chevron and Hess for their help and support for the chapter.

The committee is now working on planning a number of future events for the chapter, including the software show, golf tournament and the 2014 spring topical conference. These events take considerable time and resources to plan and execute and if you are interested in volunteering to help us with one or more then please let me know. Volunteering is a great way to get to see what happens on the committee, without the time and yearlong commitment of a full position. If you would like to help in anyway please contact any of the current committee members, through email or in person.

Similarly we are in the process of renewing the chapter corporate sponsors for this year and next. If you believe that your company would be willing to sponsor the chapter then please let us know. Chapter sponsorship includes prominent recognition on the chapter website, at chapter events and at our regular speaker luncheons and is a great way to reach the 1500 plus area members and to build name recognition and goodwill for your company. Sponsorship can be annual or event specific. Please contact our chapter treasurer (Zhipeng "Z" Liu) for details – [treasurer@spwla-houston.org](mailto:treasurer@spwla-houston.org) .

Finally I wanted to let you know that we are working on the creation of a student chapter at the University of Houston Petroleum Engineering Department. If all goes to plan we should see the addition of a student chapter VP to the committee membership and the introduction of regular speaker events associated with the University. Stay tuned for details!

Once again thank you to all those that attended our September speaker sessions and I looking forward to seeing you all (and more) back again in October. Remember, we always welcome your feedback and ideas and for more information on chapter events please visit our website [www.spwla-houston.org](http://www.spwla-houston.org) .

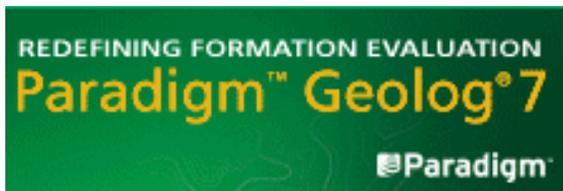
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## **Northside Luncheon Meeting**

Date: Monday, October 7th, 2013

Lunch: 11:30 Talk: 12:00

Reservations: Email Robin Slocombe

RSVP before NOON, Friday October 4th

Place: The Greenspoint Club,

16925 Northchase Drive, Houston, TX 77060

Parking: Visitor parking is available in the parking lot below the Greenspoint Club

Cost: \$35 (please use PayPal)

Lunch is included.



### **Eagle Ford completion optimization using horizontal logs**

**Presenter:** Robin Slocombe, Schlumberger.

#### **Abstract**

Schlumberger and four Eagle Ford Shale Play operators drilling in South Texas joined a consortium initiative to acquire various types of open hole logging data in several horizontal wells, and use the data to design the completions with optimum fracture stage and perforation cluster positioning. Horizontal production logs were subsequently used to gauge the effectiveness of using the log data to engineer the completions. This paper outlines the data acquisition techniques, analyses made on that data, application, results and conclusion.

Previous work carried out on production logging data acquired in several shale plays including the Eagle Ford (Miller et al, 2011) shows a significant variation in perforation cluster contribution. Other documented results showing the effect of targeting similarly stressed rock for fracture treatments (Waters, Heinze, Jackson, 2011) in the Marcellus. The objective of this study was to improve the initial flow capacity of the well by increasing the number of perforation clusters contributing to production. A related objective was to determine the optimal horizontal logging program that was needed to characterize the rock with minimal interruption to existing work flows.

This paper will show the results of data acquired over 12 horizontal wells in the Eagle Ford Shale. Petrophysical and geomechanical analyses were based on horizontal logging measurements and used as inputs to an engineered completion design tool that generated a recommendation on each well design. The design tool grouped intervals with similar properties for stimulation treatment. Following the treatment, horizontal production logs were run through the zones to measure the perforation cluster contribution.

The results of the study have the potential to change the way Unconventional Resources are developed. Recent trends have seen a shift away from data acquisition to blind geometrical fracturing. This paper examines the value of acquiring petrophysical data in the lateral section and its application to completion optimization, the minimization of wasted resources, and the impact on early production.

#### **Biography**

Robin Slocombe is a Sales Engineer working for Schlumberger in Houston TX. He supports clients based in North Houston and The Woodlands with day to day Wireline logging operations across the United States, shelf and deepwater Gulf of Mexico. Recently, he has lead the Schlumberger Completions Optimization Consortium which has helped clients working in the Eagle Ford to integrate horizontal open hole data into completions design and measure the improvement with production logging. During his 15 year career with Schlumberger he has worked in the field in Colombia, Indonesia and Qatar. He has managed operations in Qatar, Argentina, Chile and Boliva and at the Schlumberger British Training Center in Scotland. His last assignment before coming to Houston was as Account Manager in Libya. Robin graduated from Cambridge University in 1998 with Masters Degrees in Natural Sciences and Chemical Engineering. He is a member of SPWLA and SPE

## **Downtown Luncheon Meeting**

Date: Tuesday, October 15th, 2013 PLEASE NOTE REVISED DATE

Lunch: 11:30 Talk: 12:00

Reservations: Email Michael Ashby

RSVP before NOON, Friday October 11th

Place: We have changed location – Kinder Morgan – First Floor Conference Room

1001 Louisiana St Houston, TX 77002

Cost: \$30 (includes lunch\*) Please, use PayPal.

### **Comparison of Grain size, Pore throat and Permeability from Wireline and High Resolution LWD data**

**Presenter:** Nicholas Harvey - Harvey Rock Physics Pty Ltd



#### **Abstract**

The advent of high resolution LWD tools, particularly resistivity tools provides a new form of information which can be used to estimate grain size (particle surface area), Pore throat and permeability. The approach used on wireline borehole image data has elicited accurate results and given an insight into grain size, pore throat and permeability distributions within the rock. This paper compares this approach on a Wireline data set and a LWD data set over the same interval, with comments on the similarities and differences of the approach. We will conclude with a summary of the advantages and disadvantages of applying this technique to LWD data particularly in highly deviated and horizontal holes.

#### **Biography**

**Nicholas Harvey**, obtained a degree in Applied Geology from Curtin University, Perth, Western Australia in 1985. He joined Western Mining Corporation as a geologist in 1984 managing geoscience computer applications. He then moved to London and worked for Restech Europe Ltd in 1990, then BP. He returned to Australia in 1995 and worked in minerals logging. He joined Baker in 1997 with assignments in Perth and West Africa before joining Crocker Data Processing in 2003. He was managing the Imagemlog module while performing petrophysical and Image interpretation on various projects. In 2007 he joined Weatherford Australia Pty Ltd as the Earthview Image Advisor and in 2010 left Weatherford to join Target Oilfield Services Pty Ltd. He subsequently created Harvey Rock Physics, performing image interpretation projects globally. He specializes in integrating petrophysical interpretation with image logs.

## Westside Luncheon Meeting

Date: Wednesday, October 9th, 2013 PLEASE NOTE REVISED DATE

Lunch: 11:30 Talk: 12:00

Reservations: Email Shujie Liu

RSVP before NOON, Tuesday October 8th

Place: We have changed location -- BP Plaza Westlake 4-- Townhall Room 107  
200 Westlake Park Boulevard, Houston, TX 77079

Parking: Visitor parking is available at Westlake 4 overflow lot

Cost: Free

Lunch is not provided, bring your own or purchase in the BP cafeteria.



### **NMR Logging for Characterizing Unconventional Source-Rock Reservoirs**

**Presenter:** Songhua Chen - Halliburton Energy Services

#### **Abstract**

The presence of organic pores in unconventional source rocks posts new challenges for many logging tools and corresponding interpretation techniques. For nuclear magnetic resonance (NMR) logging, it also faces measurement difficulties attributed to the fast relaxation time and low porosity associated with the proton NMR signals in organic shales. Despite these challenges, NMR logging has been proven valuable for porosity, TOC, and hydrocarbon identification for organic-shale reservoir characterization. This talk begins with a brief description of the theoretical expectations of NMR logging responses in organic shale, followed by a case study including 19 wells belonging to the Eagle Ford shale formation and additional wells from Woodford and Haynesville shale plays. The study investigates the different NMR logging responses between organic-rich shale reservoirs and conventional reservoirs, and the difference between the organic-rich lower Eagle Ford vs. organic-poor upper Eagle Ford shales. Most of these wells are located in oil or gas condensates window but a few wells in the gas windows are also included for completeness. This talk mainly presents statistically significant results and discussions; individual well results are used only for the purpose of illustrating trends and features common to most of the wells studied. This presentation is based on SPWLA paper 2013-Z.

#### **Biography**

**Dr. Songhua Chen** is currently Sr. Manager of NMR Sensor Physics group at Halliburton. Prior to joining Halliburton in early 2011, he had been with Baker Hughes for more than 15 years, starting as a Sr. Scientist, progressed to Staff Scientist, Sr. Staff Scientist, and Sr. Manager of Petrophysics and Integrated Interpretation. In the last 20 years, he has been actively involved in various projects in the area of NMR interpretation, sensor development, petrophysics, and carbonate rock models. Before working at Baker Hughes, he was a Sr Research Scientist at Texas Engineering Experiment Station doing researches in the area of applying NMR imaging and relaxometry techniques for multiphase flow characterization in porous media. Songhua got his B.S. from Nanjing Institute of Technology in Nanjing, China and a Ph.D. From University of Utah in Salt Lake City, Utah, U.S.A., both in physics.