SPWLA - Houston Chapter News
September, 2011

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September 2011 Luncheon Meetings

Northside **Monday, Sep 12, 2011** The Greenspoint Club	**Unconventional Reservoir Fracture Evaluation Utilizing Deep Shear-Wave Imaging** *by Doug Patterson, Baker Hughes*
Westside **Wednesday, Sep 14, 2011** BP Plaza Terrace Room	**Dielectric Dispersion Logging** *by Jim Hemingway, Schlumberger*
Downtown **Wednesday, Sep 28, 2011** Chevron Auditorium	**Compartments for Beginners: Wellbore Formation Testing in the Real World** *by Bo Cribs, Chevron*

Local SPWLA Upcoming Events

Society of Core Analysis Conference
18th to 21st September, 2011
Austin, Texas

Formation Testing SIG
27th September, 2011 (7:45 to 3:30 pm)
1501 McKinney, Houston, 77010
Contact: Ken Kemp

SPWLA Topical Conference – Computational Petrophysics
9th to 12th October
Asheville, North Carolina

Golf Tournament
This Fall (October?)
To sponsor the Event, contact Rob Hengel

Software and Hardware Vendor Show
One day during week of 5th December

Spring Topical Conference
2nd or 16th May, 2012 (date and topic to be confirmed)
Chevron Auditorium, 1500 Louisiana St, Houston, 77002

53rd Annual SPWLA Symposium
Date and location to be confirmed

Complete Calendar of Events

Put your Company here

Put your Company here

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President's Corner

September, 2011

Dear Chapter Members,

Welcome back, I hope that your summer was safe and enjoyable. We are about to start our coming year's program with the September Luncheon Seminars, and I hope you can attend at least one of them.

Looking down the road a bit, we expect to have our Chapter Golf Tournament sometime this fall, likely in October. Randy Mitchell, one of our past VP's (Downtown), and Rob Hengel, our Treasurer, will be teaming up to organize this event, so stay tuned for news posted on the Website and for announcements at this month's Luncheon Seminars. It's time to start lining up those foursomes, and clean up the clubs. We will be looking for sponsors for various aspects of the tournament; please contact our Treasurer, Rob Hengel, Treasurer@spwla-houston.org if you or your company can help in that regard. In addition, keep your fingers crossed for good weather!

Also on the horizon is our annual Software and Hardware Vendor Show, which we again plan for the first full week of December. The exact day is yet to be determined, so stay tuned for more information as we finalize arrangements.

Paul Connolly
Houston Chapter President

Westside Luncheon Meeting

Date: Wed, Sep 14, 2011 **Lunch:** 11:30 **Talk:** 12:00 **Place:** BP Plaza Terrace Room, 1st floor, next to cafeteria *501 Westlake Park Boulevard, Houston, TX 77079*	**Dielectric Dispersion Logging** ***by Jim Hemingway, Schlumberger*** **RSVP Thaimar Ramirez before 3:00 p.m. Tuesday, Sep 13** E-mail: **Thaimar Ramirez**
Cost: Free. *Lunch is not provided, bring your own or purchase in the BP cafeteria.* **Parking:** BP Plaza Garage **Map** (4200 Westlake Park Boulevard, Houston, TX 77079).	

Abstract

Dielectric measurements have been used over the past thirty years in a variety of reservoirs to determine flushed zone water-filled porosity in formations with fresh or unknown water salinity. Injection of water and other fluids over the past few decades has changed the formation water salinity in older established fields where Rw used to be well known. This has created a need for a measurement of water saturation that is not dependent on knowing Rw. This new measurement is particularly useful in heavy oil reservoirs because little invasion occurs, making oil saturations of the uninvaded and invaded zones approximately equal. A new dielectric dispersion measurement provides dielectric permittivity and conductivity at multiple depths of investigation as a result of multiple frequencies, receiver spacings, and polarizations.

This next-generation dielectric measurement is collected over a large range of operating frequencies using an array of antennas with two separate orientations. A total of nine measurements of attenuation and phase shift are made at four different frequencies, allowing for a true measure of dielectric dispersion. Inversion of these measurements computes a simple water-filled porosity, as was done with older generation dielectric tools based on a single permittivity measurement. By measuring permittivity and conductivity at different frequencies, antenna spacings, and orientations it is possible to construct a water-filled porosity invasion profile.

Inverting all the measurements makes it possible to solve for salinity, invasion depth, and other environmental parameters that led to unpredictable results with previous-generation single-frequency tools.

Biography

Jim Hemingway, based in Houston, is a Petrophysics Advisor with Schlumberger. He began his career in 1980 as a field engineer, has held various log analyst and engineering positions and has authored many papers on pulsed neutron logging and log interpretation. In 1997, he joined the Formation Evaluation department at the Schlumberger Sugar Land Product Center, Texas, working on the RSTPro* tool and three-phase holdup interpretation techniques. In 2001, as new technology advisor, he moved to Paris to teach new technology applications for formation evaluation. In 2005, he became nuclear technology advisor and has been based in Houston since 2010. Jim received a BS degree in chemistry from Emporia State University, Kansas, USA, and a BS degree in chemical engineering from Texas A&M University.

Northside Luncheon Meeting

Date: Monday, Sept 12, 2011
Lunch: 11:30 **Talk:** 12:00
Place: The Greenspoint Club
16925 Northcase Drive,
Houston, TX 77060
Map

Unconventional Reservoir Fracture Evaluation Utilizing Deep Shear-Wave Imaging

by Doug Patterson, Baker Hughes

RSVP before 9:00 a.m. Thursday, Sep 8

E-mail: **Jack Douglas**

Cost: Pre-payment. Please, use PayPal
$32 (lunch* provided with reservations)
$20 (venue charge without lunch)
Cash, Check or Credit Card is acceptable for payment. Receipts will be provided.
*This is a fixed meal package including Chef's choice of salad, chicken entrée served with vegetable and starch, dinner rolls, dessert, iced tea, and coffee. The salads, desserts and beverages will be pre-set menu.

Directions: Map

From I-45, go East on Greens Rd. Turn right at 3rd light, onto Northchase Drive. The Greenspoint club is 1/4 mile on the right.
From Beltway 8 (going West), Exit Imperial Valley and turn right. Turn left at first light onto Benmar. Stay on Benmar to Northchase. Turn right onto Northchase Drive. The Greenspoint club is on the left.
From Beltway 8 (going East), Exit and turn left on Greenspoint Drive. Go right at first light onto Benmar. Turn left at next light onto Northchase Drive. The Greenspoint club is on the left.

Parking: Ground, 4th and 5th Levels. To access the 4th & 5th levels, pull up to the contract parking gates. There is a call box on the left-hand side. Press the button, release and gates will open. Follow park signs to the 4th and 5th level. The Greenspoint Club is located on the 5th Floor.

Abstract

Unconventional shale reservoir evaluation and development are extremely challenging. One of the most dominating aspects is permeability, which is measured in the nano-darcy range. Although these wells are stimulated to enhance production, the presence or absence of natural fractures can have a large impact on the production results. In addition, the fracture variation across a reservoir can be substantial, leading to large production variations even in adjacent wells. Gaining insight about the natural fracture system, both intersecting and around the borehole, is crucial and can often help determine the economic success of a well and/or reservoir.

The standard means of fracture evaluation, such as borehole imaging, Stoneley permeability analysis, and azimuthal shear-wave anisotropy evaluation from cross-dipole, provide valuable information when evaluating fractures. These standard methods, however, can only investigate a limited area around the borehole—imaging looks at the borehole wall and the other borehole acoustic methods rely on refracted and guided modes that respond to an area as large as 2 to 4 ft out into the formation. The flexural wave from the dipole is one of the guided modes that generally reads the deepest and is used in the standard cross-dipole analysis. In addition to flexural mode, the dipole source creates shear body waves that radiate away from the borehole and into the formation. When these shear waves impinge on a fracture, their energy reflects back to the borehole, allowing the facture to be imaged. The reflection strength is a function of the shear-wave polarization and the nature of the fracture, with the strongest response occurring from the shear waves intersecting a fluid/gas-filled fracture and polarizing in the fracture's strike direction.

Another important aspect is that these shear waves have azimuthal sensitivity, providing a means to determine the fracture direction. These features permit the evaluation of fractures over a much larger area around the well, often looking out in excess of 60 ft from the borehole and even detecting major fractures that do not intersect the well.

We will look at the application of this deep shear-wave imaging technology in several unconventional reservoirs across North America. Our review includes conventional methods and the deep shear-wave imaging analysis, showing its value in gaining important insight about the natural fracture system around the borehole, especially non-intersecting fractures.

Biography

Doug Patterson is the Acoustic Research Manager within the Houston Technology Center (HTC), Baker Hughes, Inc. where he focuses on development of both wireline and LWD devices. Doug received his BSME from Memphis University in 1978 and over his career has held positions in operations, sales, technical marketing, and technology development. In 1992, Doug joined Acutec Logging Services, where he focused extensively on the development of downhole acoustic equipment, processing software, and interpretation methods. He was with Acutec until May of 1996 when the company was acquired by Baker Atlas.

Downtown Luncheon Meeting

Date: Wed, Sep 28, 2011 **Lunch:** 11:30 **Talk:** 12:00 **Place:** Chevron Auditorium Ground Floor 1500 Louisiana St *Houston, TX 77002*	**Compartments for Beginners: Wellbore Formation Testing in the Real World** ***by Bo Cribs, Chevron*** **RSVP: before 4:00 p.m. Monday, Sep 26** E-mail: **Tsoan Ma**

Cost: $15 Pre-payment (includes lunch*) **Please, use** PayPal
Cash, Check or Credit Card is acceptable for payment. Receipts will be provided.
*Lunch will be a boxed sandwich, chips, cookie and soda or water.
Parking: Regency Parking, Allen Center Visitor Garage, various outdoor lots.

Abstract

A 2009 DeepStar study documented that most DWGOM projects tend to underperform predicted rates or reserves or both. This study concluded that a lack of appraisal data resulted in an under-appreciation of geologic complexity and compartmentalization issues. The current talk will describe a process to identify compartments and assess compartmentalization risk during the Exploration and Appraisal phase of the project. This real-time integration during drilling and wireline logging allows you to react intelligently to events and customize the data collection program. This provides increased bang-for-buck, keeping both your Asset Team Manager and the Drilling Superintendent as happy as possible.

Biography

M. E. (Bo) Cribbs has 31 years of Reservoir and Production Engineering experience working for Chevron. His expertise is in general Reservoir Engineering with emphasis in deep water evaluations, well logging, well testing and fluid sampling. Bo's assignments have spanned the Middle East, the Gulf of Mexico, Offshore West Africa, Offshore Canada and Offshore Brazil. His current assignment is to Chevron's Deepwater Gulf of Mexico Appraisal Team working on Deep Water Exploration and Appraisal data evaluation programs. Bo has helped to plan and execute over two dozen offshore well tests, personally supervising over a dozen.

Bo is a member of SPE, AAPG and SPWLA. He has been privileged to be the keynote speaker at several Industry Forums and has been an author on 12 technical papers for professional journals. Bo serves as an SPE Technical Editor and helps teach the Deepwater Well Testing session at CVX-BP Drilling Training Alliance School.