SPWLA
——*Houston Chapter News*

JANUARY 2008 LUNCHEON MEETINGS

Westside BP Plaza Wednesday, January 9	Interpreting Shoreline Sands using Borehole Images: A Case Study of the Cretaceous Ferron Sandstone Member in Utah by Chunming Xu
Greenspoint BakerAtlas/INTEQ Wednesday, January 16	Porosity?! What are we talking about anyway? by David C. Herrick
Downtown Hess Office Wednesday, Janurary 23	Using Multiple Pore Pressure Prediction Techniques Provides a Way to Reduce Drilling Risk by Roger Young

President's Corner

In my last president's corner, I mentioned that the Houston chapter board has been making preparations to bid for the SPWLA symposium in 2009, to be held in or around Houston. Last week, the International SPWLA board of directors voted to award us that event in The Woodlands, TX. What this means is that in the year of the 50th anniversary of the SPWLA, the annual conference will be hosted by "your" chapter. Much of the credit for being awarded this prestigious event is due to the overwhelming response from many of our Houston membership. We solicited your help and you responded. We received volunteers for nearly all of the key positions. Hani Elshahawi has accepted the role of General Chair. In the very near future, Hani will begin to communicate to those who volunteered. In the coming months, we will need more to step up to assist in the 2009 planning. My sincerest thanks to those of you that offered to help put this together. I look forward to celebrating with you in 2009!

On October 13 we hosted the 1st Annual Houston Chapter SPWLA Golf Tournament at Cypresswood golf club. We hoped for at least 8 or 10 foursomes and were pleasantly surprised when 64 players pre-registered. The weather on the day of the tournament couldn't have been better. Almost 60 players registered for the 8AM tee off. We completed the 18 holes in time for a late lunch (provided by the chapter as part of the registration fee). The event was sponsored by many service companies and operators. Sponsorship from Amerada Hess, Weatherford, Baker, Schlumberger, Halliburton, and Core Lab, enabled us to give a $300 driver, several other clubs (putters and wedges), many dozens of golf balls, and approximately $1,500 in other door prizes to the players. Additionally, Techsia and Printrex donated the refreshment carts for the day. Look to the web site for pictures of this event. Everyone in attendance commented on how much fun the group had, so much so, that they asked about another tournament in the Spring. At the very least, I think we can look forward to the 2nd annual tournament next year.

The next big event is our Spring symposium. We will begin planning, seeking guest speakers, setting schedules, organizing registration, etc. If any of you are interested in participating, please notify your VP or anyone else on the board so that you can become involved.

Thanks,

Furman Kelley
Houston Chapter President

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Westside Luncheon Meeting

Interpreting Shoreline Sands using Borehole Images: A Case Study of the Cretaceous Ferron Sandstone Member in Utah

by

Chunming Xu

Date:	Wednesday January 9	Place:	BP Plaza Conference room on 3rd floor. Bldg: Westlake 4 4200 Westlake Park Blvd.	Reservations:	Email: jose.silva@techsia.com
Time	Lunch: 11:30 am Talk: 12:00 Noon	Price:	Purchase lunch in cafeteria and bring to adjacent conference room.	Parking	BP Plaza Garage
Special Instructions		Everyone MUST sign in AND out at the Lobby Security desk! After receiving security badge, get your lunch and come to the 3rd floor. Follow the SPWLA signs to the conference room.			

Abstract

To establish borehole image interpretation guidelines in a siliciclastic shoreline environment, this study used unique data from the Ferron Sandstone Member in Utah, where several core holes were drilled next to the outcrop cliff and logged with electrical borehole images. The guidelines include three main components:

(1) differentiating depositional elements based on borehole image textures,

(2) multiwall stratigraphic correlation and depositional architectures and

(3) ambiguity and data limitations.

The stratigraphic interpretation of the image logs is closely correlated with the cores and the outcrops to evaluate the interpretation methodology. The sandstones of upper shoreface, middle shoreface, and channels are differentiated in each well based on a list of depositional textures and sequence characteristics revealed by the images and open-hole logs. The coals, carbonaceous shales, bay fill and transgression lag deposits are identified as important elements in building the stratigraphic framework. Channels eroding into the shoreface and shoreface pinchout into delta plains are recognized based on the facies classification and stratigraphic framework. The shoreface progradation directions are drawn through multiwall sequence correlation, paleoflow and seaward facies transition analysis.

In the muddy Canyon area, the progradation directions of the shoreface parasequences vary from north to east with dominance to the northeast. The complex channel systems with diverse flow directions almagamated in the delta plains and eroded into the strand-plain shoreface sandstones in most of the regression cycles. In the northern study area, the latest borehole image data reveals the south-or southeastward-prograding Ferron shorelines and the cyclic Blue Gate Member shoreline sequences. The integrated study supports the regional V-shaped Ferronn shoreline with oblique delta progradations within the regional eastward transportation into the Mancos sea.

Biography

Chunming received his B.S. degree in geophysics in 1982 from the Jianhan Petroleum College, China. He worked with PetroChina for 10 years as a geophysicist, interpreting seismic stratigraphy and thrust tectonics in northwestern China and the Canadian Rockies and Foothills. He joined Schlumberger in 1982 as a geologist focused on stratigraphic interpretation and reservoir characterization using openhole logs in various sedimentary environments. He joined Shell in 2006, working on integrated reservoir modeling.

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Greenspoint Luncheon Meeting

Porosity?! What are we talking about anyway?

by

David C. Herrick

Date:	Wednesday January 16	Place:	Baker Atlas/INTEQ HTC 2001 Rankin Road	Reservations:	contact dean.jackson@bakeratlas.com or 281-723-5514 prior to 11AM on Jan 15th to provide attendee list to security
Time	Lunch: 11:30 am Talk: 12:00 Noon	Price:	$10 for boxed lunch. Exact chang appreciated. Credit Card info to be provided to caterer ahead of time - 713-625-6306	Parking	see map below

Abstract

Porosity is one of the most fundamental and important petrophysical measurements made. Despite the apparently trivial nature of the concept, there has been and still is considerable controversy about what constitutes porosity and how pore space can be meaningfully subdivided and classified. Much of the confusion and controversy is due to imprecision in defining the terminology used in discussing porosity.

A major contributor to the lack of precision is the confusion of measurements of rock properties with the properties themselves. The subdivision of pore space into components such as effective porosity, primary porosity, secondary porosity, interconnected porosity, vuggy porosity, dual porosity, etc. is often made but without stating exactly how the pore space is subdivided. Porosity is also partitioned by fluid content into free-fluid, bound-fluid, irreducible water, capillary-bound water, clay-bound water, etc. Such categorization is often made by interpreting measurements; however the relationship between these categories and actual rock and fluid properties is often vague.

Lacking precision in the definition of terms has resulted in misunderstanding and controversy since the early days of petrophysical measurements. Although overcoming decades of using vague terminology will be difficult, we owe it to ourselves and to the industry to make the attempt.

Biography

David C. Herrick is Chief Petrophysicist in the Houston Technology Center of Baker Hughes. Dave was trained in chemistry and geochemistry at Indiana University (B.S.) and Penn State (Ph.D.). He has conducted research, training and technical service during his thirty years in the petroleum industry for Conoco, Amoco, Mobil and Baker Hughes in the areas of geochemistry, petrology and petrophysics. His research interests include resistivity interpretation and the electrical and hydraulic properties of rocks as a function of the pore geometry and mineralogy of reservoir rocks. Dave has been Training Coordinator and instructor for Amoco's well-known Petrophysics Training Program as well as an SPWLA Distinguished Speaker for three years with over fifty presentations and schools on resistivity interpretation given world-wide. He has been an organizing committee member for four SPWLA Topical Conferences and SPE Forums. His publications include new and fundamental work on interpretation methods for resistivity data as well as three patents. Dave was awarded the SPWLA Distinguished Technical Achievement Award in 2002.

Downtown Luncheon Meeting

Using Multiple Pore Pressure Prediction Techniques Provides a Way to Reduce Drilling Risk

by

Roger Young

Date:	Wednesday Janurary 23	Place:	Hess Office One Allen Center 500 Dallas Street	Reservations:	Make reservations as early as possible. Call 713-609-5960 and leave a message for SPWLA Reservations or email at Kkemp@hess.com
Time	Lunch: 11:30 am Talk: 12:00 Noon	Price:	$15 with reservation	Parking:	Regency Parking at 1100 Smith Allen Center Visitor Garage Various outdoor lots
Special Instructions:		One Allen Center is at the corner of Smith and Dallas. The Hess lobby is on the second level adjacent to the Smith Street entrance. You will need to check in through Security. Please arrive prior to 11:30 am to allow time to check in and get to the meeting room. There are numerous parking places in the area, a few of which are listed above.			

Abstract

The more traditional approach to pore pressure prediction using seismic data is based on an analysis of stacking velocities. This velocity-based (V-based) approach is predicated on relationships between velocity, porosity, and the pore pressure of shales. These relationships are generally good, but they are contingent on a number of well-known assumptions; sometimes the results can be spectacularly wrong.

A newer approach is based on an analysis of frequency content. Frequency-based (or Q-based) pore pressure prediction is a patented technology based on an understanding of the relationship between frequency decay and effective stress. It is a fairly straightforward calculation which can be performed on stacked seismic data. In areas where there are geopressures, volumes of data can be analyzed, and important relationships may be discerned between the geometry of the pore pressure distribution, the structure of the rocks, and the accumulation of hydrocarbons.

Knowing this critical information pre-drill can be the difference in drilling a trouble free well. Examples illustrate the differences in using several methods of Pore Pressure Prediction: Well Logs, Velocities from Seismic data that was processed for Geophysical Interpretation, Velocities from Seismic data that are more refined for Pore Pressure Prediction, and Pore Pressures derived from Frequency Attenuation. Examples also show why your most accurate shale Pore Pressure Prediction is only part of the story.

Biography

Roger Young, is Chief Technology Officer and Co-Founder of eSeis, Inc., where he is responsible for product development. He is the creator of LithSeis®, an advanced seismic analytical tool, DrilSeis®, a seismic process that produces pore pressure and fracture gradient volumes, and Q-Based® Pore Pressure Prediction, which derives pore pressure from Frequency Absorption. Roger has 27 years of industry experience, including 12 years of LithSeis development and project work. Prior to eSeis, Roger worked as a petrophysicist for Union Texas, an integration engineer for Grumman, and a logging engineer for Schlumberger. Roger was instrumental in the discovery of the largest oil field in North America in the last two decades, using this proprietary seismic petrophysics technology.

Roger holds a Master of Science in Petroleum Engineering from the University of Houston and a Bachelor of Science in Physics from Clarkson College of Technology. Roger is an active member of: SEG, SPE, AAPG, SPWLA, and HGS.

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January 2008

SPWLA meetings are open to members and non-members.

For the Downtown meeting, reservations should be made no later than noon of the day before the meeting. If you reserve and cannot attend, please call to cancel or you may be billed.

Society of Petrophysicists and Well Log Analysts
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