SPWLA - Houston Chapter News
February 2011

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February 2011 Luncheon Meetings

Westside BP Plaza Terrace Room Wednesday, February 9, 2011	Production Petrophysics – Preserving Program Flexibility to Ensure Infill Delivery in a Mature Field Environment *by Mike Webster, BP*
Northside The Greenspoint Club **Tuesday**, February 15, 2011	A Cased-Well Quantitative Gas Saturation Analysis Method *by Feyzi Inanc, Baker Hughes*
Downtown Hess Office Wednesday, February 23, 2011	Accelerated Development Model for Early Career Petrophysicists *by Gerry Ross, Petroskills*

SPWLA Houston Chapter News and Upcoming Events

Welcome Mayank Malik (Chevron), who has become the SPWLA Houston Chapter Webmaster. Thanks to Kent Mooney (Halliburton) for his contributions to the Society!

1st Formation Testing SIG Meeting
March 2, 2011 at Chevron Auditorium
1500 Louisiana, Houston, TX 77002
http://spwla-houston.org/pages/ftsig.htm

More information will be available soon!
http://www.spwla-houston.org/pages/events.htm

President's Corner

February 2011

Dear Chapter Members,

As 2011 began, we were delighted to see your active participation in our Chapter meetings at all three locations in Houston. Our membership has more than doubled since last September and continues to grow. I would like to thank the Board and especially our secretary Loren Roberts for his great work in promoting our Chapter. Although we do not require you to be a member of the world-wide SPWLA to attend our meetings, we strongly encourage you to join the Society at: http://www.spwla.org/member/join .

On April 27th (Wednesday) we will be hosting the Annual Spring Topical Conference at the Chevron building in downtown Houston. We decided to have the conference this year earlier than usual due to 2011 SPWLA Symposium being held May 14-19. Last year's conference titled "Rock Physics to Petrophysics, Closing the Loop" was a great success and we are working on something interesting this year as well.

Lastly, we would like to welcome our new Webmaster Mayank Malik, who will be replacing Kent Mooney. Mayank is a Petrophysicist with Chevron Mid-Continent USA and Alaska business unit. On Behalf of the Houston Chapter of the SPWLA, I would like to thank Kent for volunteering his time to the Society.

For more information about the luncheon seminars and any other Chapter's activities check our website http://www.spwla-houston.org/index.shtm

Best Regards,

Alexander Kostin
Interim Houston Chapter President

Westside Luncheon Meeting

BP Plaza Terrace Room, **1st floor next to the cafeteria** 501 Westlake Park Boulevard, Houston, TX 77079 **Parking:** BP Plaza Garage **Lunch:** 11:30 **Talk:** 12:00 Wednesday, February 9, 2011	Production Petrophysics – Preserving Program Flexibility to Ensure Infill Delivery in a Mature Field Environment* ***by Mike Webster, BP*** **RSVP Alexander Kostin before 3:00 p.m. Tuesday, February 8** westvp@spwla-houston.org

Abstract

As fields mature, integration of data addressing reservoir complexity and performance becomes increasingly important for subsurface teams. Production Petrophysics in particular plays a vital role in field management, optimization and reservoir surveillance. Understanding the changes in reservoir performance, fluid contacts and well productivity becomes even more significant towards the end of field life when increasing fluids uncertainty makes the identification of new infill well locations a challenge. This paper presents a case study in the Machar field where Production Petrophysical inputs minimized the risk in a high cost single well infill project.

The Machar field, located in the UK Central North Sea is a complex fractured Cretaceous chalk and Paleocene sandstone oil reservoir, trapped over a steeply dipping salt diapir. The field was discovered in 1976 and because of the high level of uncertainty regarding reservoir presence and performance was developed in a phased manner. Despite a programme of 14 dedicated Exploration & Appraisal penetrations and 3 pre-production wells, the east flank remained undrilled. Indications of improved seismic reflectivity have emerged over time, increasingly hinting at reservoir presence. Enhancing the seismic sufficiently to fully assess prospectivity on the east therefore became a priority, and ultimately led to drilling on the east flank of the field in 2008.

As Machar is a subsea field, petrophysical surveillance had been restricted due to limited well access opportunities. During infill drilling the opportunity was taken to capture cased-hole saturation and production logs in the existing well stock. This data enabled the asset team to understand the fluid displacement mechanism especially the imbibition and residual oil and gas saturations, providing a robust constraints within the reservoir model. As real time LWD data from new wells became available it allowed the asset team to selects between the multiple possible depletion scenarios and associated formation evaluation options. Various sets of LWD, open and cased-hole wireline data integrated with geological and seismic information provided the basis for the side track and completion strategy. Location of the imbibition flood front and fracture conduits and differentiation between formation and injection water were critical in selecting the intervals for perforation, acid stimulation and delivery of a successful production well.

***Paper BB by Adrian Zett, Mike Webster and Yann Jehanno presented at the SPWLA 51st Annual Logging Symposium held in Perth, Australia June 19-23, 2010**

Biography

Mike Webster is currently BP's Director of Petrophysics. He has been with BP for over 28 years including postings in the North Sea and Alaska in a variety of mainly mature field and production petrophysical roles. He holds a BSc in Geology from Aberdeen University a MEng from Herriot Watt University Edinburgh and is a Chartered Engineer.

Northside Luncheon Meeting

The Greenspoint Club 16925 Northcase Drive, Houston, TX 77060 **Price:** $30 (with reservations) **Lunch:** 11:30 **Talk:** 12:00 **Tuesday**, February 15, 2011	A Cased-Well Quantitative Gas Saturation Analysis Method ***by Feyzi Inanc, Baker Hughes*** **RSVP Rob Hengel before 9:00 a.m. Monday, February 14** rhengel@restechinc.com

Abstract

Saturation monitoring has traditionally been done using either pulsed neutron capture (PNC) logs for saline water environments or carbon-oxygen (C/O) logs for fresh water cases. Other pulsed neutron measurements have historically been used as qualitative gas indicators. Recent developments have made it possible to produce a quantitative gas saturation analysis. The physical principles, modeling, and the interpretation methodology of this new measurement form the subject of this paper.

The physics is based on neutron induced photon transport. Both neutron and photon transport are influenced by borehole contents, formation mineralogy, porosity, formation fluids, and shale. Reducing the impact of parameters not related to formation gas saturation is important. The first step in eliminating unwanted interferences is to base the measurement on the photons born out of neutron inelastic scattering interactions.

With sufficient information, it is possible to model the system and predict minimum and maximum expected measurement values. The MCNP models include full tool and completion geometry, borehole fluids, and formation minerals and fluids.

Models have been used to produce a large data base of standard completions, and these form the basis of the interpretation method. In addition, special models can be run for non-standard completion geometries or other unusual conditions.

Biography

Feyzi Inanc is a nuclear scientist at the Baker Hughes Houston Technology Center. He earned a BS in metallurgical engineering followed by MS and Ph.D degrees in the nuclear engineering discipline from Iowa State University in 1986 and 1989. Following a post-doctoral position at the Iowa State University, he worked as an assistant and associate professor at Marmara University from 1990 to 1995. He later worked at Iowa State University as a research scientist at the Center for Nondestructive Evaluation from 1995 to 2007. He joined Baker Hughes in 2007 as a scientist. In his career, he has published more than 50 technical articles, various software licensed and patents granted and pending. He received a distinguished service award from Marmara University and inventors award from Iowa State University.

Downtown Luncheon Meeting

Hess Conference Center **Room 1B/1C, ground floor** 500 Dallas Street Houston, TX 77002 **Lunch:** 11:30 **Talk:** 12:00 Wednesday, February 23, 2011	Accelerated Development Model for Early Career Petrophysicists ***by Gerry Ross, Petroskills*** **RSVP Randy Mitchell before 3:00 p.m. Tuesday, February 22** ramitchell@hess.com

Abstract

As the Big Crew Change continues, the influx of young professionals required to sustain our industry must be equipped to move from knowledge acquisition to knowledge application and problem solving. An accelerated development model is focused on both acquiring and applying discipline and cross-discipline specific principles through targeted work experiences, coaching, and training. Successfully applied, this structured approach will reduce time to competency.

Biography

Gerry Ross is a PetroSkills Vice President and instructor. He has more than 30 years formation evaluation and rock-based Petrophysics experience as well as participating in Oil and Gas operations, from exploration through production. While with Core Lab, he provided training to both majors and independents on a worldwide basis; including an extensive internal Petrophysics applications program. This multi-year program focused on the applications of rock and fluid data in log analysis, formation evaluation, reservoir engineering, and production. For the last nine years, he has been actively involved in working with the Industry in addressing the challenges of the Big Crew Change. He is a member of the SPE, SPWLA, PESGB, SEAPEX, and a past President of the Aberdeen Chapter of the SPWLA. He received a B.Sc. in Geology from Bedford College, London University.