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Please see the CWLS Website at www.cwls.org for information regarding a Corporate Network License for the recently published CWLS Formation Water (RW) Catalog CD.

Notes: Please forward this notice to any potentially interested co-workers. Thank you.

CANADIAN WELL LOGGING SOCIETY

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Wednesday, March 10th, 2010
CWLS TECHNICAL LUNCHEON PRESENTATION
FAIRMONT PALLISER HOTEL
133, 9TH AVE. S.W. CALGARY

TIME: 12:00 PM (COCKTAILS AT 11:30 AM)

RESERVATIONS BY: Friday, March 5th, 2010 (NOON) - CALL 269-9366 TO CONFIRM A SEAT

COST: MEMBERS RESERVED MEAL: $35.00; NON-MEMBERS RESERVED MEAL: $40.00 (SPECIAL NEEDS MEALS AVAILABLE WITH ADVANCED BOOKING ONLY; PLEASE REQUEST WHEN ORDERING TICKET)

TOPIC: **Downhole Fluid Analysis coupled with Asphaltene Nanoscience for Reservoir Evalution**

SPEAKER: Oliver C. Mullins, Scientific Advisor, Schlumberger

ABSTRACT:

For condensates, the most important compositional variation is GOR, and the Equation of State (EoS) treatment of GOR variations is well developed and successful. Consequently, key reservoir attributes such as vertical and lateral connectivity, extrapolating gradients to obtain contacts for reserves estimation, and properties of the produced fluids are addressed by Downhole Fluid Analysis (DFA) measuring GOR and light end compositional variations. In contrast, black oils are defined as having low GOR; while black oils can exhibit GOR variations, the most important compositional variation of black oil is the heavy ends, essentially the asphaltenes. However, interpretation of asphaltene variations in reservoirs had been largely precluded because there had been no corresponding understanding of the governing principles of asphaltene science. Indeed, the field of asphaltene science had been in disarray. Consequently, there were no work flows to evaluate reservoirs using heavy ends in the way there are for condensates.

In recent years, several major advances have taken place in asphaltene science; these advances are in use by research groups around the world to address many issues such as heavy end upgrading, interfacial properties of asphlatenes, and flow assurance. Of particular interest in Exploration is that these scientific advances greatly improved the capability to use heavy ends to characterize reservoirs containing black oils as well as lighter crude oils including condensates. The confluence of advanced asphaltene science with the third generation of DFA tools enables a powerful new approach to address reservoir dynamics. Case studies have established that this new approach can lead to connectivity predictions that are proven by subsequent production. We describe the asphaltene science advances with emphasis on reservoir crude oils. We then outline DFA case studies of reservoirs that 1) illustrate corresponding advances in asphaltene science and 2) prove new methods for assessing reservoir connectivity, tar mats, biodegradation, reserves, location of mobile oil in heavy oil columns, flow assurance and other key reservoir attributes.

BIOGRAPHY

Dr. Oliver C. Mullins is a chemist and Scientific Advisor in Schlumberger Wireline Headquarters. Building on existing technology, he is the primary originator of Downhole Fluid Analysis, a significant new product line in the oil industry, for which he was awarded three Gold Medals. He has authored the book “The Physics of Reservoir Fluids; Discovery through Downhole Fluid Analysis,” which has won an award from the Society of Technical Communication. He has been Distinguished Lecture for both the SPWLA (twice) and SPE on this topic. The corresponding tools exploit visible and near-infrared spectroscopy and fluorescence and are being used to uncover compartmentalization, connectivity and hydrocarbon fluid complexities in subsurface formations. Dr. Mullins also leads an active research group in asphaltene and petroleum science which has resolved several important controversies. His research focuses on the molecular and colloidal structures of asphaltenes and in particular asphaltene dispersion in reservoir crude oil. He has co-edited 3 books and coauthored 9 chapters on asphaltenes. He has coauthored 150 publications with 1900 literature citations in refereed journals to these publications. He has also coinvented 53 allowed US patents.