



Regional Update

Vol. 8, No. 2

Summer 2003

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Applied Geology for Petroleum Engineers Workshop with Roger Slatt on August 20

A workshop that has been suggested many times will come to fruition at 8:30 a.m., August 20, in Norman, when Dr. Roger Slatt, director of the University of Oklahoma's School of Geology and Geophysics, will present *Applied Geology for Petroleum Engineers* in a one-day meeting. Slatt is a popular speaker, and the information presented will be valuable for many people working in this region. He said he has focused this presentation toward reservoir engineers seeking some basic understanding of the geologic attributes that affect reservoir performance and that need to be considered in reservoir management.

"Sandstone depositional systems exhibit a variety of geometries, trends, reservoir quality, and sand continuity," Dr. Slatt said. "This one-day workshop will provide an overview of the major depositional systems, with emphasis on their reservoir performance based upon the previously mentioned factors. Methods to identify the different systems from seismic, core, and logs (including borehole image logs) will be presented, and when possible, with Mid-continent reservoir examples."

He noted that structural compartmentalization of reservoirs also will be discussed.

Slatt formerly was Head of the Department of Geology and Geological Engineering at Colorado School of Mines (1992-2000) and Director of the Rocky Mountain Region Petroleum Technology Transfer Council (1995-2000).

He received his Ph.D. in 1970 from the University of Alaska, then taught geology for 8 years at Memorial University of Newfoundland and Arizona State University. He then spent 14 years in the petroleum industry with Cities Service Research, ARCO Research, and ARCO International Oil and Gas Co. before joining Colorado School of Mines in 1992. He has written more than 90 papers and made numerous presentations on petroleum geology, reservoir geology, seismic and sequence stratigraphy, shallow marine and turbidite depositional systems, geology of shale, glacial and Pleistocene-Quaternary geology, and geochemical exploration.

He sits on numerous professional society committees, has organized technical conferences for AAPG and teaches short courses for industry and AAPG on the petroleum geology of turbidite systems and on applied reservoir characterization. In 1996 he received the AAPG Distinguished Service Award. He was an AAPG Distinguished Lecturer in 2001-02, and an SPE Distinguished Lecturer for 2002-03.

The meeting will be held at Moore-Norman Technology Center in Norman. For further details, check the PTTC <<http://www.ogs.ou.edu/pttc/>> or OGS <<http://www.ogs.ou.edu>> web sites, or contact Michelle Summers at OGS.

Paraffin and Asphaltene Problems Examined in Smackover on July 16

Smackover, Arkansas, was the site of a July 16 PTTC Midcontinent Region Workshop that dealt with paraffin and asphaltene related problems, which are costly to the gas and oil industry each year. The meeting was presented as part of the PUMP Project, an important PTTC activity that is outlined in the article below.

The workshop was led by Ken Barker, who has 30 years of experience in the paraffin/asphaltene treatment area with Baker Petrolite. He has worked for the company for 35 years, splitting the time between the laboratory and field technical service work.

The 6-hour course presented at this meeting helped with the understanding of what paraffin and asphaltenes are, how to identify them, why they can cause problems, types of problems they cause, how to develop a cost-effective treating program, and why hot oiling, acidizing and other treatments may cause problems in some wells.

Barker said the workshop was designed for pumpers, production engineers, reservoir engineers, field foremen, superintendents, geologists, and anyone else who wants to better understand the properties of the crude oil and condensate they are producing.

The course began with an introduction and brief history of organic problems, and field identification of paraffin and asphaltene deposits. Barker then examined the composition and physical characteristics of the materials, following up with a discussion of some of the causes of paraffin and asphaltene problems such as temperature effects, formation damage related to hot oiling, condensate treatments, acid jobs, and frac/workover/drilling fluids. He also spent time talking about tests for paraffin and testing to help select treatments. He then explained testing and treatments for asphaltene problems.

The course included information on prevention and removal of organic damage, and examined squeeze treatments, formation cleanup treatments, cost effective treatment programs, and case histories. Barker finished up with a section on economics, looking at cost effectiveness and the real cost of problems.

During the workshop, Barker pointed out that paraffin is soluble in crude oil at elevated temperatures and pressures (downhole); that paraffin deposition is a thermally driven process; that cooling during production causes wax to precipitate; that it is deposited on cold surfaces and that more cooling causes increasing viscosity. The course reviewed a number of paraffin behaviors, such as the cloud point that indicates potential problems, the loss of gas that decreases wax solubility, and several other characteristics that have meaning to the producer, pointing out that the percent of paraffin alone is not an indicator of paraffin problem potential.

He talked about many other factors involved in paraffin problems, including formation plugging, deposition, high pour point, yield value, high viscosity, tank bottoms, interfaces, filter plugging, and coated solids.

Barker is an experienced hand at dealing with these problems, and is ideally suited for this workshop. He has developed numerous chemicals, test procedures, and application techniques to cost effectively solve oilfield paraffin and asphaltene problems worldwide. He is the author or coauthor of 25 SPE papers, is an SPE guest lecturer and member of the SPE International Chemical Symposium Committee. He has collaborated on work with Sandia National Labs, Deepstar, and the University of Tulsa to provide solutions to problems in the area of paraffin and asphaltenes.

Pump Project Shifts Gears!

With a manual and 8 workshops on *Produced Water and Associated Issues* successfully completed (total meeting attendance in 1 Arkansas and 7 Oklahoma cities exceeded 130 industry personnel), emphasis of the PUMP program has shifted to one-on-one contacts between field agents and producers. Agents Hamp Bussey in Arkansas and Sam Farris with the Marginal Well Commission in Oklahoma have been visiting with operators to discuss oil-production problems and offering information and/or suggestions for possible solutions. Some newer processes they have been questioned about involve the use of plunger lift chemical injection, casing swabbing, gelled polymers, GasGun stimulation, and

polyethylene tubing liners. If you have questions or would like their assistance, call Sam at 405/604-0460 or 800/390-0460 or Hamp at 870/693-5757.

Workshops remain a popular and efficient means for transferring best management practices. In response to a number of specific requests from Arkansas operators, a workshop devoted to the issues of paraffin and asphaltene problems (see details above) was scheduled for presentation in Smackover, Arkansas in July. After produced water, dealing with paraffins was ranked the second most important technical constraint to oil production by South Midcontinent producers at the beginning of the PUMP project.

Upcoming Events

August

- 8/5 Troubleshooting Rod Pumped Wells, Enid, OK, *MWC, PTTC
- 8/12 Troubleshooting Rod Pumped Wells, Ada, OK, *MWC, PTTC
- 8/19 Troubleshooting Rod Pumped Wells, Tulsa, OK, *MWC, PTTC
- 8/20 Applied Geology for the Petroleum Engineer, Norman, *OGS, PTTC
- 8/26 Troubleshooting Rod Pumped Wells, Oklahoma City, *MWC, PTTC

September

- 9/23 Coiled Tubing and Slimhole Completions, Elk City, *OGS, PTTC
- 9/24 Coiled Tubing and Slimhole Completions, Tulsa, *OGS, PTTC
- 9/25 Coiled Tubing and Slimhole Completions, Oklahoma City, *OGS, PTTC

October

- 10/22 Cromwell Play Workshop, Norman, *OGS, PTTC

November

- 11/12-13 Cromwell Play Field Trip, Ada, *OGS, PTTC
- 11/17 Cromwell Play Workshop, half day version, *OCGS, OGS

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*MWC=Marginal Wells Commission, 405/604-0460; 800/390-0460; e-mail mwc@marginalwells.com; web site www.marginalwells.com

Applied Geology for Petroleum Engineers

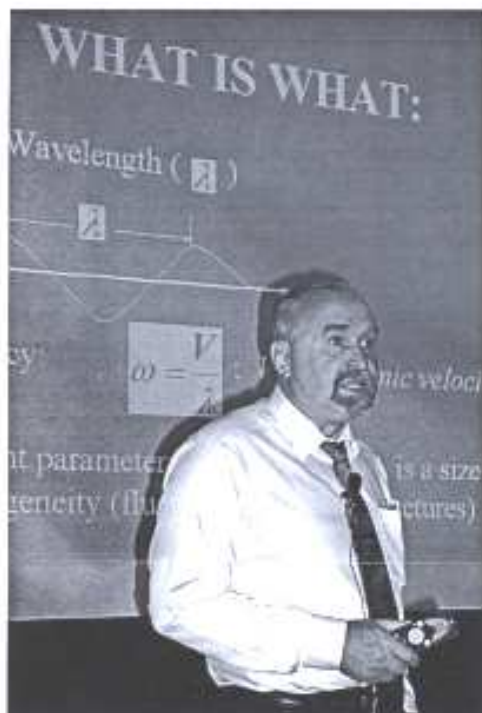
a workshop by
Dr. Roger M. Slatt

August 20, 8:30 to 4 p.m.
Moore-Norman Technical Center
Norman, Oklahoma

for more information:
www.ogs.ou.edu
405/325-3031 800/330-3996



Dr. Roger M. Slatt



Judging by the slide behind him, Evgeni Chesnokov, co-chair, attempts to answer the eternal, and important, question: What is What?

Important points included:

- ✓ New seismic processing methods for the analysis of frequency-dependent seismic anomalies.
- ✓ New seismic imaging methods for the frequency-dependent properties of reservoir rocks.
- ✓ New methods for modeling the frequency-dependent seismic properties of reservoir rocks.

Spring Workshop Centers Around Interpreting Reservoir Architecture Using Scale-Frequency Phenomena

The seventeenth Spring 2-Day workshop on information relating to Southern Midcontinent petroleum reservoirs met June 19-20 in Oklahoma City. Sponsored by the OGS, with cooperation from Sarkeys Energy Center and the U.S. Dept. of Energy's National Energy Technology Laboratory, this gathering was devoted to understanding the physical relationships between different measurement scales for reservoirs. The primary goals of the workshop were to understand how these different scales can be used to better predict reservoir properties and conditions, and to find ways to locate more petroleum in this region.

Chairs for the meeting were Raymon L. Brown, a geophysicist with the Oklahoma Geological Survey, and Evgeni Chesnokov, a research professor with the University of Oklahoma's Sarkeys Energy Center.

A total of 78 people were in attendance to hear the 28 oral papers given during the meeting and ask questions of the presenters.

The idea for the meeting came from the fact that when work proceeds from the microscopic level to field scale for oil and gas reservoirs, the behaviors change and appear to be governed by different physical principles or mechanisms. Examining these differences and the probable causes for them proved an interesting and informative basis for the research presented.

Brown hopes another international conference can be scheduled for 2005 in Oklahoma.



Raymon L. Brown, co-chair, noted "The meeting was an incredible success, attracting some of the best minds in the world on topics related to understanding the flow properties of oil and gas reservoirs."



Panelists at the OGS 17th Annual Conference on Midcontinent Reservoirs discuss issues and answer questions at the end of a session during the 2-day workshop in Oklahoma City. Left to right: Tim Spanos, Matthias G. Imhof, Anthony F. Gangi, Evgeni Chesnokov, Valeri A. Korneev, Sandhya Devi, and Mark Chapman. (Photos by Sue Crites)

The Petroleum Technology Transfer Council (PTTC) gratefully acknowledges that its primary funding comes through the U.S. Department of Energy's (DOE) Office of Fossil Energy through the National Petroleum Technology Laboratory (NPTL), and Strategic Center for Natural Gas (SCNG) within the National Energy Technology Lab (NETL).