

WORKSHOP



AAPG
Advancing the World of Petroleum Geosciences



21-23 November 2016 | Dubai, United Arab Emirates | www.spe.org/events/16jdu3

SPE/AAPG/EAGE Unconventional Plays Workshop: Achieving Efficiency and Effectiveness through Integration

The unprecedented success of unconventional plays in North America has triggered global interest in exploring tight reservoirs in various basins of the world. As operators aggressively pursue exploration and development of unconventional plays, new challenges have emerged as a result of these activities. Exploitation of these unconventional resources revealed its economic potential as a source of energy to the increasing demand for energy regionally and globally. Recent exploration and drilling operations in various basins have shown some increase in the number of unconventional wells. Deep drilling into subsurface strata have been enabled by well placement and geo-steering technologies. Characterisation of the subsurface formations require detailed and comprehensive analysis of seismic data, drilling measurements, formation evaluation, testing, core analysis, and geomechanics. Reservoir characteristics in terms of depth, temperature, maturity, mineralogy, dominant stresses on the borehole have large impact on the economic viability of these resources and require careful assessment and evaluation. Furthermore the tectonic settings of the various regions make hydraulic fracture placement a major challenge manifested in the effectiveness and productivity of the stimulated zones. Identification of sweet spots fairways within a given basin can be achieved through basin analysis and surface seismic data. Accurate geomechanical models need to be built and wells drilled to optimise fracture placement and effectiveness. To achieve this goal integration and innovative technologies are required which will result in improving reservoir productivity and reducing the cost of completion. Under the current low oil prices efficiency, cost reduction, integration, and technology innovation are required to produce these assets economically.



This workshop is planned and organised by three key international societies that best understand such resources: the Society of Petroleum Engineers, the American Association of Petroleum Geologists, and the European Association of Geoscientists and Engineers. The combined expertise of these world class professional societies will ensure an extremely beneficial workshop experience for the attendees. Technical and poster sessions from industry experts are planned which will ultimately bring value to all participants.

EARLY BIRD
REGISTRATION DEADLINE
7 OCTOBER 2016

WHO SHOULD ATTEND

Petroleum Geologists

Petrophysicists

Geophysicists

Geomechanics

Petroleum Engineers

Drilling and Completion
Engineers

Testing Engineers

Production Engineers

Gold Sponsor



Bronze Sponsor

Schlumberger

Submit a 500 word abstract to
jesperanzate@spe.org before
31 May 2016.

**CALL FOR
SPEAKERS**

COMMITTEE MEMBERS

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Schlumberger

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East

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Weijian Mo
Shell-China

Li Qun
PetroChina (China National
Petroleum Corporation)

Albertus Retnanto
Texas A&M University at
Qatar

Abdullah Saad Sultan
King Fahd University of
Petroleum & Minerals

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SCHEDULE

Monday, 21 November 2016

0730-0820 | Welcome Coffee, Collection of Badges and Delegate Packs

0820-0830 | Hotel Safety and Security Briefing

0830-0840 | Opening Remarks by Co-Chairpersons

0840-0900 | Keynote Address

0900-1030 | **Session 1: Emerging Unconventional Plays**
Session Chairs: **Li Qun**, PetroChina (China National Petroleum Corporation); **Albertus Retnanto**, Texas A&M University at Qatar

Organically rich source rocks are currently targeted for unconventional oil and gas exploration and development in many places around the world including Algeria, Oman, Kuwait, UAE, Saudi Arabia, China, and Latin America. Some success has been reported from some countries and this will play a major role in changing the energy landscape in these countries. The objective of the Emerging Unconventional Plays session is to share with the workshop participant different examples on the method used to uncover the unconventional resources potential in these new basins. Presentations will focus on the strategy followed for data collection during the initial exploration phase and the economics benchmarks used to assess these emerging plays. In addition, we will discuss the working model that is followed for data integration and decision-making. Such information will provide the national oil companies, international oil companies, and services companies with the information needed to evaluate where to move next and how to extend help to accelerate the exploitation of the geological potential of such resource plays.

1030-1100 | Open Discussion

1100-1130 | Coffee Break

1130-1300 | **Session 2: Geoscience and Engineering Characterisation of Unconventional Plays**
Session Chairs: **Gaurav Agarwal**, Baker Hughes;
Robert Kuchinski, Weatherford

The characterisation of unconventional plays requires numerous integrated and multi-disciplinary workflows and inputs of large amount of varied geologic and engineering data. Assembling the data, and producing reservoirs models that reflect all the critical formation properties is an extremely timely and complex endeavour. All of the effort required to carry out this process usually precedes any drilling and completion activities. Validation and updating of these models will follow after a certain amount of drilling and completion and data acquisition. Topics that are crucial in this process are:

- Sweet spots mapping
- Integrated workflows
- Big data analysis
- Geochemistry and basin modelling
- Reservoir modelling

1300-1330 | Open Discussion

1330-1430 | Luncheon and Prayers

1430-1600 | **Session 3: Unconventional Well Construction Practices**
Session Chair: **Colby Fuser**, Halliburton

Unconventional gas and oil production has been driven by technological advances in drilling, completions, and stimulation over the past decade. Specifically, the combination of long lateral horizontal wells with multiple stage hydraulic proppant fracture stimulation has unlocked the economic productivity of tight hydrocarbon and source rocks. These new type of reservoirs had not previously been targeted for oil and gas exploration, appraisal, and development. Unconventional horizontal multiple stage-fractured wells are a specific subset of global oil and gas wells that offer unique challenges and opportunities unparalleled in the industry. This session introduces and explores the specific requirements of the well construction and drilling rig completion of these wells. Some topics for discussion are:

- Casing design
- Completion design
- Artificial lift requirements
- Horizontal lateral spacing and length
- Drilling practices
- Well placement/Geo-steering
- Pad drilling
- Rig equipment

1600-1630 | Open Discussion

1630-1700 | Wrap-Up of Day 1

1700 | Networking Coffee Break

TUESDAY, 22 November 2016

0800-0830 | Welcome Coffee

0830-0840 | Summary of Day 1

0840-0900 | Keynote Address

0900-1030 | **Session 4: Unconventional Well Completion and Stimulation Practices**
Session Chairs: **Mohammed Badri**, Schlumberger;
Alfredo Mendez, Baker Hughes

Hydraulic fracturing has proven to be an effective method to produce economic flow rate of unconventional reservoirs. The number of stages and spacing between stages have played a key role in maximising the accessibility to reservoir formations. Several new completion technologies have been developed recently allowing improved performance and reducing the cost and environmental impact through frac water re-use. The effectiveness of fracturing is evaluated through microseismic monitoring technology where poorly fractured segment of the reservoir can be clearly identified. The fracture depth deep into the formation can be analysed through injection of chemical tracers which will assist in evaluating the fracturing performance.

Subsurface characterisation through pilot wells and careful frac design are essential to achieve economic rates from these unconventional plays.

1030–1100 | Open Discussion

1100–1130 | Coffee Break

1130–1230 | **Panel Session: Unconventional Resources in the Middle East: Challenges and Opportunities**

Session Chairs: Mohammed Badri, Schlumberger; Ahmed Hakami, Saudi Aramco

The panel session will start with short presentations by invited speakers followed by Q&A. This session will discuss the various challenges that Middle East operators are facing or might experience while exploring or developing unconventional resources. These challenges include but are not limited to technical, economic, environmental, and regulatory challenges. Given the fact that different parts of the Middle East are at different stages of exploration and exploitation of these resources, the landscape of these challenges will vary with time as the region gains more experience during execution. The challenges are viewed as opportunities related to technology innovation and integration, efficiency, and delivery of output at economic rates. This leads into changing the way companies (operators and service providers) operates, requiring significant transformation of processes and methods to achieve the required efficiency and economics of these assets.

The session is staged to discuss these challenges and opportunities in the context of the Middle East potential growth of unconventional exploration and development activities. It will also address the impact of today's oil market condition on the economic viability of unconventional resources in the region.

1230–1300 | Open Discussion

1300–1400 | Luncheon and Prayers

1400–1530 | **Session 5: Production Performance and Resources Estimation**

Session Chairs: Yasir Al-Hajri, Petroleum Development Oman; Dominique Guérillot, Texas A&M University at Qatar

Production predictions for unconventional reservoirs remain challenging and are often based on empirical observations/extrapolation of existing trends. This session will cover new practices adopted by operators to evaluate in-place and resource volumes, from the understanding of fundamental flow behaviours at different scales (from nano-pore to well hydraulics), to methods representing such mechanisms in order to predict them. Production performance of unconventional plays is still the subject of different practices in the industry: whether it is the use of early production data to assess performance, flow-back strategies to avoid early condensate deposition, or to account for frac water imbibition into the formation, and the implementation of cost-effective artificial lift methods. This session will be an occasion to compare approaches and best practices, while discussing novel and emerging methods to maximise long-term production and reserves.

1530–1600 | Coffee Break

1600–1630 | Open Discussion

1630–1700 | Wrap-Up of Day 2

Wednesday, 23 November 2016

0800–0830 | Welcome Coffee

0830–0840 | Summary of Day 2

0840–0900 | Keynote Address

0900–1030 | **Session 6: Making the Unconventional Plays Work**

Session Chairs: Ahmed Hakami, Saudi Aramco; Albertus Retnanto, Texas A&M University at Qatar

Rapidly evolving technologies and services have ignited the unconventional hydrocarbon revolution in North America. However, it is believed that the unconventional hydrocarbon production miracle is not limited to North America and it should be replicated elsewhere. The Middle East basins are expected to be one of the most potential emerging unconventional plays. These basins hold the world's largest conventional hydrocarbon reserves and may have a magnitude of hydrocarbons in unconventional reservoirs waiting to be developed. The current global analysis outlines some key challenges that exist for unconventional gas development in the Middle East. This session will discuss the optimum requirements to make unconventional plays work.

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These requirements include but are not limited to: building capabilities in people, building fit-for-purpose supply chain for materials and services, building an organisation with agile decision-making and operational model. In addition, we will share some examples of the industry best practices for unconventional gas development in today's market condition.

1030-1100 | Open Discussion

1100-1130 | Coffee Break

1130-1300 | **Session 7: Environmental Impacts of Unconventional Plays**

**Session Chairs: Aqeel Ahmed, BAPCO;
Colby Fuser, Halliburton**

Since the early development of unconventional in North Texas, the industry has achieved multiple milestones, ranging from the discovery and expansion of several unconventional plays in the United States to the new development of reservoirs across the Eastern Hemisphere. One challenge still remaining is reducing the environmental impact of development in these plays.

Most unconventional plays require significant efficiencies to make development economical, while also enhancing the net present value and return on investment. In balancing the ratio of cost versus production, the environmental aspect must be considered when managing overall cost.

An important aspect of unconventional development is the scale and scope needed to produce a sustainable programme. For this to be successful and profitable, it must satisfy four major stakeholders in the oil and gas production process: the oil companies, the shareholders, the society, and the host communities. This session will discuss the impact that unconventional gas development has on the environment, including what is working today and what has been proposed to address unsolved challenges to satisfy major stakeholders.

1300-1330 | Open Discussion

1330-1400 | Workshop Summary and Closing

1400-1500 | Luncheon and Prayers

GENERAL INFORMATION

Format – Three days of informal discussions prompted by selected keynote presentations and discussions. Focused topics and issues critical to advancing both technology and best practices. Majority of the presentations are in the form of case studies, highlighting engineering achievements, and lessons learnt. In order to stimulate frank discussion, no proceedings are published and the press is not invited to attend.

Documentation

- Proceedings will not be published; therefore, formal papers and handouts are not expected from speakers.
- Work in progress, new ideas, and interesting projects are sought.

Poster Session – The Steering Committee encourages registrations from professionals who are able to prepare and present a poster on a relevant project.

Attendance – Registrations will be accepted on a first-come, first-served basis. The Steering Committee encourages attendance from those who can contribute to the workshop most effectively either in discussions or with posters

Workshop Deliverables

- The Steering Committee will appoint a "scribe" to record the discussions and to produce the full workshop report for SPE.

Commercialism – Commercialism in posters or presentations will not be permitted.

Attendance Certificate – All attendees will receive an attendance certificate attesting to their participation in the workshop.

Continuing Education Units – Attendees at this workshop qualify for SPE Continuing Education Units (CEU) at the rate of 0.1 CEU per hour of the workshop.

Registration Information – This is a nonresidential workshop and therefore hotel accommodation is not included in the registration fees. The registration fees include all workshop sessions, coffee breaks, and luncheons.

Cancellation and Refund Policy

- A processing fee of USD 100 will be charged for cancellations received before the registration deadline 22 October 2016.
- For cancellations received after the registration deadline, 22 October 2016, 25% refund will be made to the registrant.
- No refund on cancellations received within seven (7) days prior to the workshop date, i.e. on or after 14 November 2016.
- No refund will be issued if a registrant fails to attend the workshop.

Registration Policy

- Registration fee **MUST** be paid in advance for attending the SPE Workshop.
- Full fixed fee is charged regardless of the length of time that the registrant attends the workshop.
- Fixed fee cannot be prorated or reduced for anyone (workshop co-chairpersons, committee members, speakers, discussion leaders, students, and registrants).
- Delegates with no proof of advance payment are required to pay onsite by cash or cheque, present a copy of the wire transfer, or submit a letter from their company guaranteeing payment of the workshop fees.

SPONSORSHIP INFORMATION

Sponsorship support helps offset the cost of producing workshops and allows SPE to keep the attendance price within reach of operations-level individuals, those who benefit most from these technical workshops.

Sponsors benefit both directly and indirectly by having their names associated with a specific workshop. While SPE prohibits any type of commercialism within the workshop hall itself, the society recognises that sponsoring companies offer valuable information to attendees outside the technical sessions.

SPONSORSHIP CATEGORIES

Sponsorships are offered on a first come basis. Please contact SPE to verify the availability of a particular sponsorship. Existing sponsors have the opportunity to renew the same level of sponsorship for annual workshops

SPONSORSHIP BENEFITS

In addition to onsite recognition; SPE will recognise sponsors on the SPE website and in all printed material for the workshop. Based on the sponsorship selected, sponsoring companies also receive logo visibility on promotional workshop items.

FOR MORE INFORMATION

For a detailed list of available sponsorships, including benefits and pricing, contact **Jenna Esperanzate** at jesperanzate@spe.org.

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The Society of Petroleum Engineers (SPE) is a not-for-profit professional association whose members are engaged in energy resources development and production. SPE serves more than 168,000 members in 144 countries worldwide. SPE is a key resource for technical knowledge related to the oil and gas exploration and production industry and provides services through its publications, events, training courses, and online resources at www.spe.org.

Income from events will be invested back into SPE to support many other Society programmes. When you attend an SPE event, you help provide even more opportunities for industry professionals to enhance their technical and professional competence. Scholarships, Certification, the Distinguished Lecturer programme, and SPE's energy education programme Energy4me are just a few examples of programmes that are supported by SPE.

Since its founding in 1917, the American Association of Petroleum Geologists has been a pillar of the worldwide scientific community. The original purpose of AAPG, to foster scientific research, to advance the science of geology, to promote technology, and to inspire high professional conduct, still guides the Association today.

AAPG provides publications, conferences, and educational opportunities to geoscientists and disseminates the most current geological information available to the general public.

As the world's premier professional association for explorationists, AAPG is about the science of petroleum geology.

AAPG's membership is made up of about 40,000 members in 129 countries in the upstream energy industry who collaborate – and compete – to provide the means for humankind to thrive.

AAPG provides the network of communications that allow those professionals to succeed.

The European Association of Geoscientists and Engineers (EAGE) is a global professional, not-for-profit association for geoscientists and engineers with almost 19,000 members worldwide. It provides a global network of commercial and academic professionals to all members. The association is truly multi-disciplinary and international in form and pursuits.

All members of EAGE are professionally involved in (or studying) geophysics, petroleum exploration, geology, reservoir engineering, mining and mineral exploration, civil engineering, tunneling and environmental matters.

EAGE operates two divisions: the Oil & Gas Geoscience Division and the Near Surface Geoscience Division.

EAGE's Head Office is located in the Netherlands and has Regional Offices in Houten (Europe Office), Moscow (Russia & CIS Office), Dubai (Middle East Office), Kuala Lumpur (Asia Pacific Office) and Bogota (Americas Office).

AAPG / EAGE / SEG / SPE THE KNOWLEDGE MANAGEMENT CHALLENGE

YAS ISLAND ROTANA HOTEL, ABU DHABI, UAE | 16-17 NOVEMBER 2016

This two-day workshop will provide both experienced practitioners and those new to the field with an essential update on best practices, relevant case studies and lessons learned, as well as practical tools and techniques to help ensure the success of knowledge management (KM) initiatives within upstream organizations, especially in the context of a changing oil market.

AREAS OF DISCUSSION:

- Building KM Programs
- Current KM practices
- Knowledge Mapping
- Communities of Practice
- Transferring Knowledge and Expertise
- Collaboration



