



12-16 DECEMBER 2021

3RD EDITION: AAPG/EAGE HYDROCARBON SEALS OF THE MIDDLE EAST GTW – AN AAPG/EAGE VIRTUAL EXPERIENCE –

EAGE

EUROPEAN
ASSOCIATION OF
GEOLOGISTS &
ENGINEERS

virtual



WORKSHOP BROCHURE

WHAT TO EXPECT FROM THE AAPG/EAGE VIRTUAL EXPERIENCE

Due to the ongoing travel restrictions and differing guidelines from companies and organizations, the AAPG/EAGE 3rd Edition: Hydrocarbon Seals of the Middle East GTW will now be taking place virtually from 28 November - 2 December 2021 and then on-demand anytime, from anywhere, and from any device for the next 2 months. The workshop will provide the best opportunity to safely connect with industry colleagues and peers while travel restrictions, social distancing, and health concerns persist. The new dynamic all-digital platform makes it simple for you to access all the great science, networking, and technology to help you stay on the cutting edge of petroleum geoscience. Our businesses and industry are experiencing difficult times, but overcoming obstacles is what explorers do – so let's do it together.

Benefits of our virtual events:

- Easily view the live presentations, ask questions and chat with other attendees
- Easily access the technical program and details of each presentation
- View the profiles of each presenter
- Participate in breakout discussion sessions
- Networking with other attendees and schedule one on one meetings
- Access to all the presentations for up to 2 months after the workshop
- Access to a dedicated sponsorship page
- Digital delegate bag and certificate of attendance

TECHNICAL PROGRAM COMMITTEE

Hamad Al Shuaili (Chair)
PDO

Omar Al Jaaidi
Ara Petroleum

Lars Hubert
Masirah Oil

Sultan Abdullah
Saudi Aramco

Suleiman Shukairi
Daleel Petroleum

Jose Guevara
Oxy

Khalil Al Hooti
Sultan Qaboos University

WORKSHOP OUTLINE

This five-day workshop has the primary goal to share knowledge, case studies, techniques and workflows pertaining to the understanding and prediction of hydrocarbon seals for exploration and production in the Middle East.

Seals are a fundamental element of any hydrocarbon accumulation, and can control trap integrity, migration and charge volumes; the lateral and vertical distribution of hydrocarbons in a trap; percent fill (or spill) of a reservoir; and the flow of hydrocarbons from the trap during production. As such, the long-term economic success or failure of an exploration to development project is very dependent on seal risking. Thus, consideration of subsurface hydrocarbon seals should have a high priority early on in any subsurface evaluation programme.

In many areas, despite the clear importance of seals, they often remain the least studied and integrated element of the petroleum system and are subject to lasting dogmas (e.g. the thicker the seal the greater its capacity to seal). Elements that contribute to making seals effective, such as lithology, their brittle-ductile nature, the hydrocarbon column length, the pressure regime and trap type will be reviewed.

Both vertical and lateral seals must be identified when exploring for subtle and stratigraphic traps. Seals created by faults and other types of seals will be reviewed. Quantification of effective seals and an ability to predict seal capacity before drilling is key to safe and successful exploring. In terms of seal assessment, understanding and predicting hydrocarbon seals is typically a multidisciplinary task requiring geosciences and engineering to collaborate on both dynamic and static data. In many areas of the Middle East our approach to understanding seals varies and it is now time to come together, share what we think and we know through the exchange of workflow, technique, and case study examples.

Workshop Objectives

The workshop has a rich program of oral presentations and e-posters covering a variety of seal aspects. It will present integration cases of seismic, special core analysis, petrophysical, geochemical, pressure, and production data. Participants are expected to leave with knowledge and exposure to the following:

- Regional and intraformational seals with field analogues
- Sequence stratigraphic framework, facies and relationships to seal occurrences
- Hydrocarbon seal architecture and capacity in carbonate, evaporite and clastic sequences
- Static (capillary) and dynamic sealing capacity and hydrocarbon retention.
- Integration of petrophysical, rock mechanics, seismic and engineering data for hydrocarbon seal assessment
- The impact of structural geology & geomechanics on hydrocarbon seals
- Sealing capacity of faults and implications for fluid flow modeling

Benefits of Attending

The workshop is an opportunity for attendees to receive up-to-date knowledge about hydrocarbon seals in exploration and production, exposure to regional case studies and to be introduced to workflows and techniques utilized for seal detection and capacity assessment. It is an opportunity to network and share experiences.

WORKSHOP GUIDELINES

FORMAT

The workshop will be 5 days, consisting of presentations, e-poster presentations and breakout sessions where participants can discuss and investigate a specific theme that is of mutual interest. The first day will feature an inaugural keynote speech by a high-profile professional from the industry.

ATTENDANCE

Registrations are invited from all relevant disciplines with experience and/or knowledge of the subject areas being addressed in the workshop. Registrations will be accepted on a first-come, first-served basis.

CALL FOR E-POSTERS

You are invited to prepare an e-poster for presentation at the virtual workshop. If you are interested in participating, please send a short abstract to cnavarro@aapg.org by 28 October 2021. All e-poster presenters will have a dedicated 5 minute session during the technical program to present their work. Attendees will be able to further discuss the e-posters with the presenters via the virtual chat feature throughout the event.

REGISTRATION TYPES & FEES

Fees are inclusive of access to all the live talks and on demand presentations for up to 2 months after the event. To register using a 'Member' rate you must be an active member of AAPG or EAGE.

Member: \$525
Non-Member: \$625
Faculty Member: \$200
Faculty Non-Member: \$250
Student Member: \$100
Student Non-Member: \$150
To register please visit: middleeast.aapg.org

REGISTRATION DEADLINE

To guarantee your seat, please make sure to register by **5 December 2021**.

CANCELLATION POLICY

AAPG will refund the tuition, less a \$100 processing fee, if the request is received no later than 30 days prior to the workshop. Cancellations must be made in writing. The registrar will accept cancellation notices by telephone, but all such notices must be followed up by fax or e-mail. No refund will be made for cancellations received less than 30 days prior to a workshop being given. Nonpayment of tuition does not constitute automatic cancellation. If no cancellation notice is received by 30 days prior to a workshop, participants are liable for full tuition. AAPG reserves the right to cancel a workshop if enrollment is insufficient to ensure proper effectiveness. Substitutions for individuals can be made at any time. A paid enrollment may be transferred one time to a future workshop if the request is received prior to the 30 day cut-off date.

SILVER SPONSOR



شركة تنمية نفط عمان
Petroleum Development Oman

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TECHNICAL PROGRAM

WORKSHOP SESSIONS WILL
COMMENCE EACH DAY AT
12.30pm Gulf Standard Time

virtual

DAY 1 SUNDAY 12 DECEMBER

- 12.30-12.40 **WORKSHOP CHAIR'S WELCOME AND INTRODUCTION**
- 12.40-12.50 **INAUGURAL KEYNOTE**
Zuwaina Al Rawahi, Chief Geologist, PDO
- 
- 12.50-13.20 **TECHNICAL KEYNOTE**
Mohammed Al Kindi, Earth Sciences Consultancy Centre
Overview of Oman Petroleum Systems, and its Multiple Seals
- 
- SESSION 1: REGIONAL, SUB-REGIONAL AND LOCALIZED INTRAFORMATIONAL SEALS WITH FIELD ANALOGUES**
- Sessions Chairs** **Omar Al Jaaidi, Ara Petroleum & Suleiman Shukairi, Daleel Petroleum**
- 13.20-13.45 **Ali Al Hajri, PDO**
Al Bashair: Seal or Reservoir?
- 13.45-14.10 **Emma Butler, Occidental Oil and Gas International**
Seal Types of Stratigraphic Traps in the Natih Truncation Play of Northern Oman
- 14.10-14.25 Coffee Break & E-Posters
- 14.25-14.50 **Hussain Najwani, Ara Petroleum**
Structural-Stratigraphic Potential of Cretaceous Natih Targets in B44 and B31 North-West Oman
- 14.50-15.15 **Max Norman, CGG**
Modern Analogues as the Key to Understanding the Depositional Evolution of the Al Khilata Formation, Oman
- 15.15-15.35 **E-Poster Presentation Summary Session**
- 15.35-16.35 Breakout Session
- 16.35 End of Day 1

DAY 2 MONDAY 13 DECEMBER

- SESSION 2: SEQUENCE STRATIGRAPHIC FRAMEWORK, FACIES AND RELATIONSHIPS TO SEAL OCCURRENCES**
- Sessions Chairs** **Hamad Al Shuaili, PDO & Khalil Al Hooti, Sultan Qaboos University**
- 12.30-12.55 **Nick Whitcomb, Occidental Oil and Gas International**
Inter & Intraformational Seal Configurations that Support Upper Shuaiba Stratigraphic Trap Concepts of SE Abu Dhabi, UAE
- 12.55-13.20 **Hussain Al Zuhairi, PDO**
Effective Sudair Intraformational Seals: A Key to Form Structural and Stratigraphic Truncation Traps in North Oman
- 13.20-13.45 **Mohammed Al Kindi, Earth Sciences Consultancy Centre**
A New Oil Seepage in the Oman Mountains and its Geological, Geochemical and Petroleum System Context
- 13.45-14.00 Coffee Break & E-Posters
- 14.00-15.00 Breakout Session
- 15.00 End of Day 2

DAY 3 TUESDAY 14 DECEMBER

- SESSION 3: HYDROCARBON SEAL ARCHITECTURE, CAPACITY AND RETENTION IN CARBONATE, EVAPORITE AND CLASTIC SEQUENCES**
- Sessions Chairs** **Suleiman Shukairi, Daleel Petroleum & Sultan Abdullah, Saudi Aramco**
- 12.30-12.55 **Kate Pollard & Parvaneh Karimi, Occidental Oil and Gas International**
Intraformational Sealing Potential in the Upper Shuaiba of North Oman
- 12.55-13.20 **Lars Hübner, Masirah Oil**
Cretaceous and Paleocene Seals and Thief Sands in the Masirah Graben, Oman
- 13.20-13.35 Coffee Break & E-Posters
- 13.35-14.00 **Syed Haider, KAUST**
Primary Hydrocarbon Migration, Retention and Sealing of the Jurassic Tuwaiq Mountain Formation, Jafurah Basin, Saudi Arabia
- 14.00-14.25 **Nils Bang, DNO ASA**
The Dynamic Seal of the Tawke Field
- 14.25-15.25 Breakout Session
- 15.25 End of Day 3

DAY 4 WEDNESDAY 15 DECEMBER

- SESSION 4: INTEGRATION OF PETROPHYSICAL, ROCK MECHANICS, SEISMIC AND ENGINEERING DATA FOR HYDROCARBON SEAL ASSESSMENT**
- Sessions Chairs** **Lars Hubert, Masirah Oil & Sultan Abdullah, Saudi Aramco**
- 12.30-12.55 **Sabine Klarner, SKGeo**
Challenges Using Seismic Data for Fault Seal Evaluation
- 12.55-13.20 **Ahmed Al Aghbari, PDO**
Integrating Geological Models, Well Data and Geophysical Methods in Mapping the Miqrat Stratigraphic Play
- 13.20-13.45 **Wim Lekens, GeoProvider**
Hydrocarbon Seal Characterization of Carbonate and Clastics Sequences Using Mud Gas Data
- 13.45-13.55 Coffee Break & E-Posters
- 13.55-14.20 **Olaf Klarner, Klarenco**
Fault Sealing Properties Analysis: Integration of Various Methods and Approaches
- 14.20-14.45 **Khalil Al Hooti, Sultan Qaboos University**
Assessment of Seal Integrity Using Microseismic Data in a Carbonate Field Undergoing TA-GOGD: A Case Study from Oman
- 14.45-15.45 Breakout Session
- 15.45 End of Day 4

DAY 5 THURSDAY 16 DECEMBER

- SESSION 5: THE IMPACT OF STRUCTURAL GEOLOGY & GEOMECHANICS ON HYDROCARBON SEALS**
- Sessions Chairs** **Jose Guevara, Occidental Oil and Gas International & Hamad Al Shuaili, PDO**
- 12.30-12.55 **Mary Jubb, Occidental Oil and Gas International**
Observations on Sealing Behavior in Restraining Bend Structural Traps, Southeast Abu Dhabi
- 12.55-13.20 **Yaser Al Zayer, Saudi Aramco**
Geomechanical Modeling Approaches for Seals De-Risking
- 13.20-13.45 **Loic Bazalgette, PDO**
Seal or Reservoir? Structural Controls on the Properties of North Oman's Paleocene Shammar Formation
- 13.45-13.55 Coffee Break & E-Posters
- 13.55-14.55 Breakout Session
- 14.55-15.05 Workshop Wrap Up & Adjournment
- E-POSTER PRESENTATIONS**
- Kazuo Nakayama, GeoResearch NAKAYAMA**
Sealing Capacity of Jurassic in Basra Area: Application of Equivalent Grain-Size Method
- Pramod Kumar Bansal, ONGC, India**
Top Seal Characterization
- Yusra Qasmi, PDO**
A Regional Assessment of Proven and Potential Seals in the Glacial Reservoirs of the Permo-Carboniferous Al Khilata Formation in South Oman
- Saleh Qahtani & Ahmed Alhawaj, Saudi Aramco**
Impact of Rock Brittleness and Localized Deformation on Top Seal Integrity

TO REGISTER, PLEASE CLICK HERE



FOR MORE INFORMATION VISIT
middleeast.aapg.org