



FUELING THE FUTURE

SPE OKC OIL & GAS SYMPOSIUM

FUELING THE FUTURE

17-19 APRIL 2023

SYMPOSIUM SCHEDULE



50th Anniversary

Hosted by SPE Oklahoma City
At the Oklahoma City Convention Center
100 Mick Cornett Dr, Oklahoma City, OK 73109

2023 SPE OKLAHOMA CITY OIL & GAS SYMPOSIUM

» Symposium History | 50th Anniversary

The SPE OKC Oil and Gas Symposium (formerly known as Production and Operations Symposium) is a biennial symposium held at the Oklahoma City Convention Center. The Symposium was founded in 1971 by the local SPE OKC Board, and we are excited to be celebrating our 50th Anniversary. The Symposium is devoted to showcasing the most advanced proven technologies as well as emerging technological concepts to further the development and production of oil and natural gas.

The meeting will present papers to help operators and service companies achieve commercial viability with innovative solutions to drilling, completion, and production engineering challenges. The goal is to help the oil and gas industry improve well and program economics and extend commercial success to reservoirs that are difficult to produce.



About the Society of Petroleum Engineers

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 164,000 members in 143 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.

Registration and Badge Pick-Up Hours Outside Exhibit Hall D

Registration Hours

Monday, 17 April.....12:00pm – 5:00pm
Tuesday, 18 April.....7:00am – 4:30pm
Wednesday, 19 April.....7:00am – 4:30pm

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WELCOME FROM THE CHAIRPERSON

Dear Colleagues,

I am pleased to welcome you to the 50th Anniversary of the SPE OKC Oil and Gas Symposium. This event first took place in 1971 as a production and operations focused symposium. On our 50th Anniversary, we are covering all energy industry related topics from Mergers and Acquisitions to Innovation and Technology. We pride ourselves in bringing you the most advanced proven as well as emerging technologies to progress your career and company forward.

As a 10-year industry professional with experience in many engineering disciplines such as Production, Planning, Reservoir as well as Business Development at Devon Energy, an Oklahoma City based E&P, I am honored to serve as this year's Chairperson.

On behalf of the entire Symposium committee, I invite you to take advantage of all the symposium technical discussions (Keynote Speakers, two panel discussions, 12 high quality technical sessions with over 45 presentations), great networking opportunities (including Exhibition Happy Hour and Industry Collective Networking Hour) and the 60,000 sq. ft. exhibition floor featuring the latest technologies and services in the industry.

On Monday, join us for a special Welcome Reception and 50th Anniversary Celebration with Rick Muncrief, President and CEO of Devon Energy. Tuesday morning, we will be hosting the Energy Breakfast with Deb Ryan, Head of Low Carbon Commodities at S&P Global. She will be presenting on Future of Energy: Thriving in an ever-changing energy landscape. Tuesday afternoon, join us for a remarkable Keynote Luncheon with Dr. Scott Tinker: Director of the Bureau of Economic Geology, the State Geologist of Texas, and a professor holding the Allday Endowed Chair in the Jackson School of Geosciences at The University of Texas at Austin, and Founder of nonprofit Switch Energy Alliance. He will be presenting on Balance Energy Security, Economic Security, and Climate Security.

After canceling the 2021 Symposium due to COVID, we are very excited to host this event in-person to cultivate face-to-face relationships that has historically been a highlight of the symposium. I am confident you will gain both valuable and applicable industry knowledge at our event.

Thank you so much for attending and I hope you enjoy the Symposium!



Shahd Tarar

Chairperson, SPE OKC Oil and Gas Symposium
Asset Supervisor, Delaware Basin, Devon Energy



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PROGRAM QUICK VIEW

Monday, 17 April

6:00pm – 9:00pm	Welcome Reception, 50th Anniversary Celebration with Rick Muncrief
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Tuesday, 18 April

8:00am – 9:30am	Women's Energy Network Breakfast with Deb Ryan, S&P Global Future of Energy: Thriving in an ever-changing energy landscape
9:30am – 11:30am	Technical Program: EOG Resources Sustainable Operations; Well Integrity; Production Analytics
11:30am – 1:00pm	Keynote Luncheon with Dr. Scott Tinker Balancing Energy Security, Economic Security, and Climate Security
1:00pm – 3:00pm	Technical Program: Completions, Energy Transformations, Improved/Enhanced Oil Recovery
3:00pm – 4:30pm	Perspectives on Lower-48 A&D Panel (Devon, Diamondback, ConocoPhillips & Guggenheim)
4:30pm – 6:00pm	Exhibition Happy Hour with Live Podcast

Wednesday, 19 April

8:30am – 11:30am	Technical Program: Devon Energy Redefining Recoverable Reserves; Drilling; Flow Dynamics
11:30am – 1:00pm	Baker Hughes Lunch (30th anniversary of lunch tradition)
1:00pm – 3:00pm	Technical Program: Reservoir Development, Formation Evaluation, Artificial Lift
3:00pm – 4:30pm	Converting Innovation to Value Panel (Devon Energy, Hess & ConocoPhillips)
4:30pm – 6:00pm	Industry Collective Networking Hour
6:00pm – 8:30pm	TTS 25th Anniversary Celebration

Thursday, 20 April and Friday 21 April Continuing Education

Thursday	Data Analytics for Artificial Lift by Dr. Rajan Chokshi
Friday	Basic Pressure – Transient Test Analysis by Dr. John Lee
Thursday & Friday	Practical Python Programming for Engineers by Derrick and Katherine Turk

All Monday, Tuesday, Wednesday, events hosted at the Oklahoma City Convention Center.

An oil pumpjack is silhouetted against a bright orange sunset sky. The sun is low on the horizon, creating a lens flare effect. In the background, other industrial structures are visible.

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Devon is proud to produce oil and natural gas that fuels our modern world. Beyond our products, we're driven to deliver industry-leading results while being a good neighbor, valued and effective community partner, responsible environmental steward and supportive, caring employer.

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The logo consists of three horizontal orange bars of increasing length, stacked vertically.

devon

FULL PROGRAM (as of 16 April 2023)

Monday, 17 April

Welcome Reception

50th Anniversary celebration with Guest of Honor Rick Muncrief

6:00pm – 9:00pm

Level 3, Room 301A–D



Rick Muncrief

President and Chief Executive Officer
Devon Energy



Rick Muncrief was appointed to the board of directors and elected president and chief executive officer of the company in January 2021 following Devon's merger with WPX Energy. Muncrief previously served as chief executive officer and chairman of the board of WPX Energy. He became a member of WPX Energy's board of directors in 2014.

Prior to joining WPX, he served as senior vice president, operations and resource development of Continental Resources, Inc. Muncrief was earlier employed from August 2008 through May 2009 by Resource Production Company where he served as corporate business manager. From September 2007 to August 2008 he served as president, chief operating officer and as a director of Quest Midstream Partners, LP. From 1980 to 2007, he served in various managerial capacities with ConocoPhillips and its predecessor companies, Burlington Resources, Meridian Oil and El Paso Exploration.

Tuesday, 18 April

Women's Energy Network Breakfast

Future of Energy: Thriving in an ever-changing energy landscape

8:00am – 9:30am

Level 3, Junior Ballroom



Deb Ryan

Head of Low Carbon Commodities
S&P Global Commodity Insights

S&P Global

Increasing environmental and economic pressure on oil and gas companies has raised questions about the future of the industry. As the energy transition space continues to evolve, understanding how the oil and gas industry can positively impact that new landscape will be important. Deb Ryan brings almost 20 years of upstream oil industry experience and as the current Head of Low Carbon Commodities she will share insights to help you stay relevant, engaged and thriving in this new landscape. Joined by Amanda Colyer, Regional Director of Operations at Helmerich & Payne and Petroleum Engineer by trade, Deb and Amanda will conduct a fireside chat to share their own experiences navigating a male dominated industry and the positive outlook for women seeking to be part of the future of energy.

FULL PROGRAM (as of 16 April 2023)

Tuesday, 18 April (continued)

Technical Program

9:30am – 11:30am

Operators Forum

Level 2, Room 208 AB

Session Chairpersons: Mark Van Domelen, Byron Cottingham – Cottingham Consulting

This session will highlight an EOG project from the Permian Basin related to Closed Loop Gas Capture, a presentation from Oklahoma-based EnerQuest Oil and Gas on production forecasting and EUR estimation using data sets from Oklahoma and other basins, and a presentation from Devon Energy highlighting the use of data visualization and analytics for optimizing large scale production operations.

Time	Paper #	Presentation
9:30am – 10:30am	-	Sustainable Operations: Closing the Loop on Gas Capture E. Brink, D. Lunsford, J. Hessert, EOG Resources Inc.
10:30am – 11:00am	213074	Dimensionless Recovery Profiles M.J. Mollman, Enerquest Oil & Gas LLC
11:00am – 11:30am	213058	Effective Data Visualization And Analytics: Unique Considerations For Large Scale Production Operations T.W. Stephenson, Devon Energy Corporation

Well Integrity

Level 2, Room 209 A

Session Chairpersons: Mary Susan Van Domelen – WellData Labs, Adonis Costin Ichim – Tenaris

This session covers a mix of case studies, experimental evaluations, modeling, and data analysis applied to the continuously evolving field of well integrity. These will provide the audience with insights and best practices guiding not only oil and gas development, but also CCUS and geothermal, both during the well construction phase and P&A.

Time	Paper #	Presentation
9:30am – 10:00am	213072	Casing Deformation During Hydraulic Fracturing Shale Gas Reservoirs In China: What We Know And What We Tried L. Han, Tubular Goods Research Center, CNPC; S. Yang, NPC Tubular Goods Research Institute, CNPC; L. Dai, Southwest petroleum university; J. Cao, Y. Mou, NPC Tubular Goods Research Institute, CNPC; X. Wu, University of Oklahoma
10:00am – 10:30am	213087	Connection Fatigue Evaluation For Cyclic Dogleg Bending Events Using Fatigue Crack Growth Method B. Lin, F. Bennett, A. Barnett, D. Coe, U.S. Steel Tubular Products
10:30am – 11:00am	213073	Geomechanical Study And Wellbore Stability Analysis For Potential CO2 Storage Into Devonian And Silurian Formations Of Delaware Basin S.T. Nguyen, T.C. Nguyen, H. Yoo, New Mexico Institute of Mining and Technology; G. El-kaseeh, NMT Petroleum Recovery Research Center
11:00am – 11:30am	-	Workflow Analysis – Identifying Casing Failures with Signature Fracturing Treatment Pressure Behavior A. Hoffman, Lewis Energy Group

FULL PROGRAM (as of 16 April 2023)

Tuesday, 18 April (continued)

Technical Program

9:30am – 11:30am

Production Operations 1 – Analytics

Level 2, Room 209 B

Session Chairpersons: Danish Suleman Tarar – Continental Resources Inc., Joshua Kyle Merritt

This session covers a wide variety of diagnostics aimed to develop a comprehensive operations-based approach for improving existing production and extending the production lifetime. The case studies utilize both machine learning and physics-based approaches for providing practical solutions to intricate but relevant issues faced by the operators today. The studies also address a broad spectrum of Artificial Lift related considerations in various reservoir and fluid settings.

Time	Paper #	Presentation
9:30am – 10:00am	213095	Application Of Machine Learning Optimization Workflow To Improve Oil Recovery A. Koray, D. Bui, New Mexico Institute of Mining and Technology; W. Ampomah, New Mexico Inst-Mining & Tech; E. Appiah-Kubi, J.A. Klumpenhower, New Mexico Institute of Mining and Technology
10:00am – 10:30am	213089	Optimizing Artificial Lift Timing And Selection Using Reduced Physics Models H. Zalavadia, M. Gokdemir, U. Sinha, Q. Ji, S. Sankaran, Xecta Digital Labs
10:30am – 11:00am	213059	Application Of Machine Learning To Evaluate The Performances Of Various Downhole Separator Types In Oil And Gas Production Systems L.C. Osorio Ojeda, M.O. Olubode, H. Karami, University of Oklahoma; T. Podio, Echometer
11:00am – 11:30am	213052	Optimizing Rod Pump Performance Using High Frequency, High Resolution Pressure Data At The Wellhead K. Vekved, T. Ito, TOKU Systems; R. Gordon, Consultant

Keynote Luncheon

11:30am – 1:00pm

Balancing Energy Security, Economic Security, and Climate Security

Level 3, Junior Ballroom

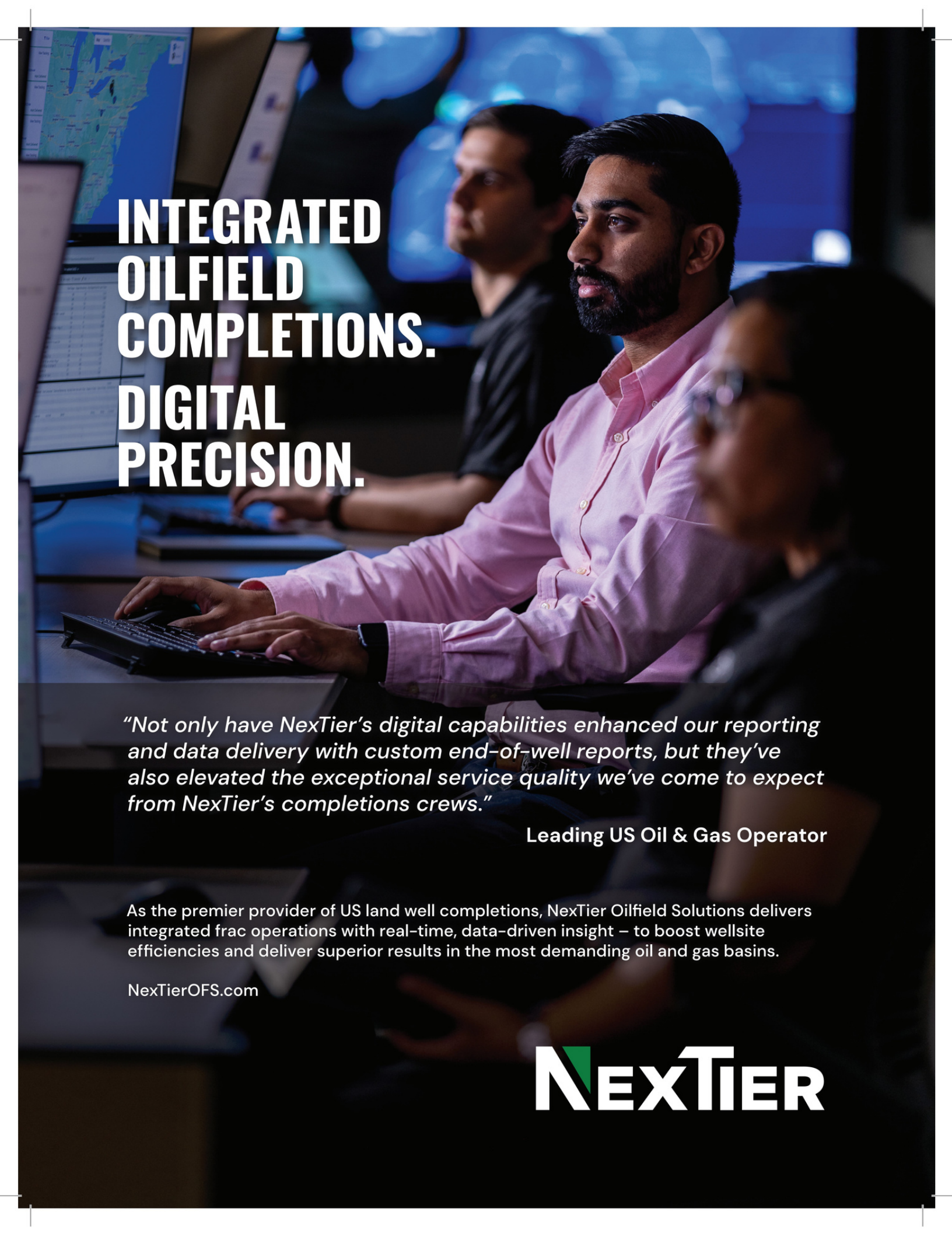


Dr. Scott Tinker

State Geologist of Texas
Director | Bureau of Economic Geology
at The University of Texas
Founder of Switch Energy Alliance



Providing security is a primary objective of every global leader. With the fervent push in Western Europe and the US to address climate issues, and the resultant policy-driven energy crisis in the EU, several important realities are becoming clear. First, there are no clean and dirty, renewable and nonrenewable energy sources. They all have benefits and environmental impacts. There are trade-offs. Second, not everything can, or should be electrified. Many of the industrial materials and services required by global economies such as steel, cement, plastic, ammonia and transoceanic travel require high heat produced by burning energy dense molecules. Finally, secure energy—affordable, reliable and safe—underpins economic health, lifts people from poverty, and provides nations with the ability to invest in the environment, including atmospheric emissions reductions. Intermittent sources such as solar and wind require expensive backup to make them reliable. Recognizing these realities sets the framework for a balanced dialog about energy, climate, poverty, and other major global issues.



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FULL PROGRAM (as of 16 April 2023)

Tuesday, 18 April (continued)

Technical Program

1:00pm – 3:00pm

Completions

Level 2, Room 208AB

Session Chairpersons: Ronald Glen Dusterhoft – Halliburton Energy Services Group, Patrick Scott Galuska – TRP Energy

Completions operations and optimization are multi-faceted topics ranging from maximizing well performance and uniform lateral stimulation coverage to improving operational efficiency and process automation. To further improve performance, novel technologies and methods will be discussed to highlight the breadth of tools being used today and their impact on completions performance.

Time	Paper #	Presentation
1:00pm – 1:30pm	213076	Delineating And Quantifying The Hydraulic Fracturing Energy System A. Navaiz, P.F. Stark, J. Doucette, Halliburton
1:30pm – 2:00pm	213101	Automated Completion Surface System: The Path To Fracturing 24/7 T. Marvel, SEF Energy; A. Johnson, Downing; P. Douget, M. Mast, Blue Ox Resources; J. Dyer, J. Kuehn, SEF Energy; B. Wiesner, Downing
2:00pm – 2:30pm	213098	Introducing Digitalization And Automation For Improvements In Fracturing Operational Efficiency And Safety C. Ortiz, G. Taitt, A. Balzan, T. Viator, R. Fux Campa, SLB
2:30pm – 3:00pm	213085	An Efficient Hydraulic Fracture Geometry Calibration Workflow Using Microseismic Data H. Bachi, The University of Texas at Austin; J. Wu, PetroChina Southwest Oil & Gas Field Company; C. Liu, The University of Texas at Austin; X. Yang, C. Chang, PetroChina Southwest Oil & Gas Field Company; W. Yu, SimTech LLC; K. Sepehrnoori, The University of Texas At Austin



FULL PROGRAM (as of 16 April 2023)

Tuesday, 18 April (continued)

Energy Transformation – Geothermal and Carbon Capture & Storage

Level 2, Room 209 A

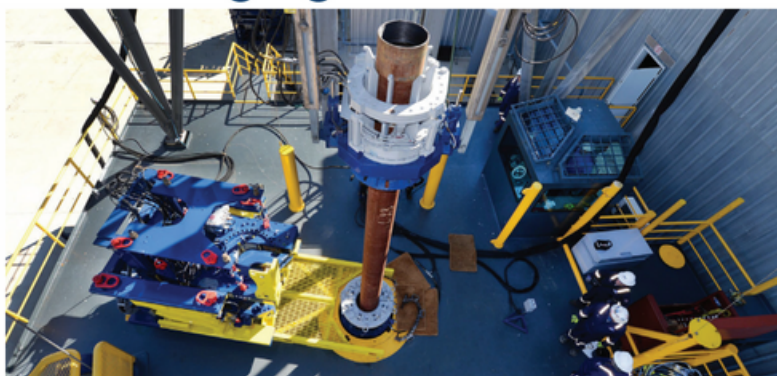
Session Chairs: Bilal Zoghbi – Baker Hughes, Ryan Sonntag – Chesapeake Energy Corp., Mouin Almasoodi – Devon Energy

This special session will provide insight into new advances in geothermal energy production and CO2 mitigation. Three of the presentations in this session will highlight the possibilities that exist, and associated challenges, in harnessing geothermal energy in various areas including Oklahoma. The other presentation in this session looks at a method to mitigate CO2 emissions through CO2 mineralization.

Time	Paper #	Presentation
1:00pm – 1:30pm	–	Lithium from Oilfield Brines: a Pathway to Increase Sustainability of Oil & Gas Development <i>M. Greb, Devon Energy</i>
1:30pm – 2:00pm	213084	Numerical Simulation Of In-situ CO2 Mineralization In Mafic Basaltic Formations In Southwest Oklahoma Q. Al Maqbali, University of Oklahoma; S. Hussain, United Energy Pakistan Limited; G. Mask, X. Wu, University of Oklahoma
2:00pm – 2:30pm	213068	A Robust Screening Tool To Repurpose Hydrocarbon Wells To Geothermal In Oklahoma E. Ugarte, S. Salehi, University of Oklahoma
2:30pm – 3:00pm	213094	Scalable Geothermal Energy Potential From Sedimentary Basins In Oklahoma C. Vivas, University of Oklahoma MPGE; S. Salehi, R. Nygaard, University of Oklahoma; D.J. Reh, Criterion Energy Partners

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OES Corporate Headquarters is located in Broussard, Louisiana and along with its Tubing & Assembly Division in Houma, Louisiana services the Gulf Coast and Gulf of Mexico regions. From its Broussard facility, OES has also shipped personnel and equipment to international oilfield areas such as Suriname and Mexico to West Africa, Malaysia and Trinidad.

FULL PROGRAM (as of 16 April 2023)

Tuesday, 18 April (continued)

Technical Program

1:00pm – 3:00pm

Improved and Enhanced Oil Recovery

Level 2, Room 209 B

Session Chairpersons: Abdulaziz Mustafa Ellafi, Joshua Kyle Merritt

This session covers advanced Enhanced Oil Recovery (EOR) Applications for conventional and unconventional formations. Several case studies are introduced to investigate various reservoir conditions and EOR methods to optimize residual oil recovery using experimental and simulation research. The effectiveness of novel techniques is considering the capital and operational cost to enhance production and return on investment with higher net present value.

Time	Paper #	Presentation
1:00pm – 1:30pm	213102	Experimental Investigation Of Amphoteric And Microbial Surfactants For Enhanced Oil Recovery In Shaly Sandstones R. Pandey, A. Tinni, C.S. Rai, University of Oklahoma
1:30pm – 2:00pm	213082	Advanced, Superior Shale Oil Eor Methods For The DJ Basin R.A. Downey, Shale Ingenuity LLC; K. Venepalli, Computer Modeling Group Ltd; J.C. Erdle, Computer Modelling Group Ltd.
2:00pm – 2:30pm	213071	Development Of A Multi-Completion-Gas And Downhole Water Sink-Assisted Gravity Drainage (MC-GDWS-AGD) Process To Improve Oil Recovery And Reduce Water Cut In Reservoirs With Strong Water Aquifers D.A. Al-Obaidi, University of Baghdad; D.A. Wood, DWA Energy Limited; W.J. Al-Mudhafar, Basrah Oil Company; A.K. Wojtanowicz, Louisiana State University; A. Merzoug, Texas A&M University
2:30pm – 3:00pm	213060	Optimization Of Child Well Hydraulic Fracturing Design: A Bakken Case Study A. Merzoug, Texas A&M University; A.M. Ellafi, University of North Dakota

Perspectives on Lower 48 A&D Panel

3:00pm – 4:30pm

As unconventional basins continue to evolve, we will sit down with four industry leaders to discuss perspectives & themes on what the future of A&D looks like in the lower-48.

Level 1, Exhibit Hall D



Mo Laghari (Moderator)
Senior Managing Director
Guggenheim Securities



Bill Lambert
VP of Business Development
Devon Energy



Danny Yick
Sr Director of Corporate A&D
ConocoPhillips



Jere Thompson
VP of Strategy & Corp. Development
Diamondback Energy

FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April

Exhibition Happy Hour

Happy Hour on exhibition floor with a live podcast!

4:30pm – 6:00pm

Level 1, Exhibit Hall D





Mark LaCour
Editor in Chief and Podcast Host
Oil and Gas Global Network



Technical Program

Devon Energy – Redefining Recoverable Reserves:
Lessons Learned from an Eagle Ford Case Study

8:30am – 11:30am

Level 2, Room 208 AB

Session Chairpersons: Mary Susan Van Domelen – WellData Labs, Catherine E Oster – Devon Energy Corporation

This session is dedicated to the lessons learned from a multidisciplinary approach to evaluating reservoir drainage patterns and hydraulic fracture stimulation interactions in a development consisting of primary (parent) wells, new infill wells and a horizontal devoted exclusively to observation. The study was conducted as part of the DOE/NETL Hydraulic Fracturing Test Site 1. Showcased are the advanced monitoring and analysis techniques utilized to evaluate the potential to capture stranded reserves via refracs and infill drilling. Technologies deployed include liner refracs, horizontal coring, formation imaging and advanced lateral logs, sealed wellbore pressure monitoring (SWPM), downhole fiber-optics (both permanent and deployable), seven downhole pressure gauges, time-lapse geochemistry, and iterative production interference tests. The results confirmed that secondary development is a viable strategy and provides guidance towards a successful full field development strategy.

Time	Topic	Speaker
8:30am – 8:45am	Project Overview	Kourtney Brinkley
8:45am – 9:15am	Geologic Learnings from Horizontal Core	Cameron Thompson, Joe Comisky
9:15am – 10:00am	Operational Review and Stimulation Learnings from Fiber Optics	Chris Ketter
10:00am – 10:30am	Core Walk Through	Molly Turko, Buddy Price
10:30am – 10:55am	Measuring New Reservoir Stimulation and Well Interactions Through Time	Jackson Haffener
10:55am – 11:20am	Understanding Reservoir Drainage Using Geochemistry and Production Highlights	Peter Jones, Sarah White
11:20am – 11:30am	Lessons Learned	Kourtney Brinkley, Cameron Thompson

FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April (continued)

Technical Program

8:30am – 11:30am

Drilling and Well Construction

Level 2, Room 209 A

Session Chairpersons: Adonis Costin Ichim – Tenaris, Gary L Cartwright

This session discusses drilling and well construction methods focused on cementing, managed pressure drilling, simulation, and machine learning. Through the case studies and modeling work presented, attendees can transfer knowledge to their challenges in both unconventional and conventional formations.

Time	Paper #	Presentation
8:30am – 9:00am	213081	Intentional Wet Shoetrack Completions For Unconventional Oil And Gas Resources: Methods And Techniques A. Gandomkar, A. Gundersen, R.A. Gomez Barker, T. Broussard, C. Kadler, Baker Hughes
9:00am – 9:30am	213078	Multi-stage Heavy Pill Displacement Using Managed Pressure Tripping Technique In Hpht Well With Narrow Drilling Margin – A Case Study In Haynesville Shale S. Dametz, B. Huggard, Aethon Energy Management; A. Yousefi Sadat, S. Cody, F. Aliyev, Opla Energy
9:30am – 10:00am	213097	Real-time Mpd Hydraulics Simulator: An Alternative Solution To The Conventional Pressure-while-drilling Tool – A Case Study A. Yousefi Sadat, S. Cody, J. Pitkanen, J. He, Opla Energy
10:30am – 11:00am	–	Application of Fiber Optics and Acoustic Imaging to Multi-Bench Marcellus Development M. Mantell, Chesapeake Energy, A. Mercer, Chesapeake Energy
11:00am – 11:30am	–	Comparison of Volatiles Analysis of Cuttings from Woodford and Caney Laterals from the SCOOP Play in Oklahoma M. Smith, Advanced Hydrocarbon Stratigraphy



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FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April (continued)

Production Operations 2 – Flow Dynamics

Level 2, Room 209 B

Session Chairs: Daniel Snyder – Ichor, Kristian M Cozyris – OSCO Controls

This session dives into tubular flow dynamics, the issues caused by liquid loading and potential solutions. The studies include lab and simulations with results for each.

Time	Paper #	Presentation
8:30am – 9:00am	213090	An Investigation Into The Mechanisms Of Liquid Loading In Small-diameter Vertical Pipes M. Malin, T-O Engineers and Ardurra Company; B.J. Todd, Montana Tech
9:00am – 9:30am	213063	An Experimental Study On The Effects Of Tubular Restrictions On Liquid Lifting In Natural Gas Wells C. Mateus-Rubiano, M. Alsanea, H. Karami, University of Oklahoma
9:30am – 10:00am	213096	Experimental Investigation Of Co₂Ch₄ and C₂H₆ In Black & Condensate Shale Oil K. Enab, H. hassoun, Texas A&M International University
10:30am – 11:00am	213079	Increasing Production By Using A 2-stages Filtration System With A Gas Separator In Rod Pump S. Vyas, Odessa Separator Inc.; A.T. Wadman, CML Exploration LLC; L.A. Guanacas, Odessa Separator Inc.; G. Gonzalez, Odessa Separator Inc
11:00am – 11:30am	-	Overcoming Inefficiencies of Annular Flow in a Hybrid Gas Lift Well C. Frost, Flowco Solutions

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FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April (continued)

Baker Hughes Lunch
Symposium tradition of the Wednesday Baker Hughes Lunch!

11:30am – 1:00pm
Level 1, Exhibit Hall D

Two short presentations starting at 12:00pm:
Rob Klenner – Baker Hughes – Geothermal: Renewable Energy You Can Count On (15 mins)
Bilal Zoghbi – Baker Hughes – What’s new at the Energy Innovation Center (15 mins)



Join us for Free Lunch and Free Exhibit Hall Pass
(Symposium Registration not required)

Technical Program
Reservoir Development

1:00pm – 3:00pm
Level 2, Room 208 AB

Session Chairs: Abdulaziz Mustafa Ellafi, Patrick Scott Galuska – TRP Energy
This session covers the development techniques for production forecasting and the estimated ultimate recovery of tight-gas sand and unconventional wells. Contributing authors may overcome some limitations and weaknesses in most of the proposed applications in the past. In addition, these combination methods involve machine learning tools that may assist the industry in understanding reservoir development in unconventional reservoirs.

Time	Paper #	Presentation
1:00pm – 1:30pm	213075	The High Cost Of Poor Child Protection: Economic Evaluation At The Pad Level With Primary Well Refracs R.E. Barba, Integrated Energy Services Inc
1:30pm – 2:00pm	213093	Recommended Practice For Determining The Maximum Surface Injection Pressure For Saltwater Disposal Wells D. Childers, X. Wu, Mingtech Petro LLC
2:00pm – 2:30pm	213080	Generating New Production Type Curves Through Machine Learning Utilizing Dimensional Analysis G. Mask, X. Wu, University of Oklahoma
2:30pm – 3:00pm	-	An Improved Type Curve Workflow using “Proximity Forecasting” D. McMaster, ComboCurve



The collaborative partner of choice for chemistry technology.

Maximizing customer value by:

- Delivering cost-effective chemistry solutions and implementing optimized chemistry solutions
- Helping increase production at lower cost per barrel produced
- Supporting customers by applying our capabilities and resources to their operations

FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April (continued)

Technical Program

1:00pm – 3:00pm

Formation Evaluation

Level 2, Room 209 A

Session Chairs: Kristian M Cozyris – OSCO Controls, Danish Suleman Tarar – Continental Resources Inc.

This session covers key advances aimed at improving the accuracy of results obtained from a wide range of formation evaluation applications across the entire well lifecycle. The field studies examine practical applications of these novel interpretive techniques to address deficiencies in measured data and improve the accuracy of the information extracted from such data sets. The studies evaluate the aforementioned techniques in a variety of reservoir settings and can be applied across various stages in the development lifecycle of a field.

Time	Paper #	Presentation
1:00pm – 1:30pm	213083	Completion Diagnostic Tools, Production Logging Technology Delivers Accurate Flow Contributions Vertical & Horizontal Wellbores D.C. Heddleston, Indepth Production Solutions
1:30pm – 2:00pm	213070	Projection Of Logging While Drilling Data At The Bit By Implementing Supervised Machine Learning Algorithm A. Sharma, T. Burak, R. Nygaard, University of Oklahoma; S. Hellvik, E. Hoel, Aker BP
2:00pm – 2:30pm	213061	Petrophysical Rock Typing In Uinta Basin Using Models Powered By Machine Learning Algorithms C.L. Arengas Sanguino, University of Oklahoma
2:30pm – 3:00pm	213103	Physics Guided Data Driven Model To Forecast Production Rates In Liquid Wells U. Sinha, H. Zalavadia, S. Sankaran, Xecta Digital Labs



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FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April (continued)

Production Operations 3 – Artificial Lift

Level 2, Room 209 B

Session Chairs: Daniel Snyder – Ichor, Ronald Glen Dusterhoft – Halliburton Energy Services Group

This session covers ongoing production operation problems and potential solutions. Tools in each study were implemented in the field and results will be presented.

Time	Paper #	Presentation
1:00pm – 1:30pm	213099	Biom mineralization: Surface Injection Eliminates Bradenhead Pressure R. Hiebert, BioSqueeze Inc.
1:30pm – 2:00pm	213056	Slow-release Downhole Chemical Treatment In Rod Pump, Esp And Gas Lift, Including A Non-pulling Tubing Method Of Installation G. Gonzalez, Odessa Separator Inc; J. Chavarria, Conoco Phillips; D. Sanchez, R. Arias, Odessa Separator Inc.
2:00pm – 2:30pm	213064	Management Of Gas Slugging Along With Sand Handling To Improve ESP Performance And Efficiency N. Johnson, Odessa Separator Inc; L.A. Guanacas, Odessa Separator Inc.; G. Gonzalez, Odessa Separator Inc
2:30pm – 3:00pm	213086	Higher Confidence Gas Lift Valve Optimization Survey Using Full Production Logging And Mfc Caliper Data D.C. Heddleston, Indepth Production Solution



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- ESP Application Engineering & Design
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- ESP Vendor Manufacturing & Testing Audits
- ESP Field Technician Audits & Services
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Contact Jeff Dwiggins @ (405)627-8539

Or Email us at infor@dcl-als.com



FULL PROGRAM (as of 16 April 2023)

Wednesday, 19 April (continued)

Converting Innovation to Value

3:00pm – 4:30pm

In an ever-changing industry that relies on constant innovation, we will sit down with three experienced individuals who know how to advance ideas to commercial value at scale.

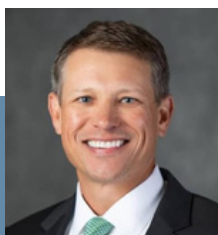
Level 1, Exhibit Hall D



Kyle Haustveit (Moderator)
Devon Energy Ventures Manager
Devon Energy



Robert Fast
CTO
Hess



Trey Lowe
CTO
Devon Energy



Greg Leveille
CTO
ConocoPhillips (Retired)

Industry Collective Happy Hour

4:30pm – 6:00pm

End of Symposium Happy Hour with OKC Industry Societies!

Level 1, Exhibit Hall D

THE INDUSTRY COLLECTIVE



YOUNG PROFESSIONALS IN ENERGY



FULL PROGRAM (as of 16 April 2023)

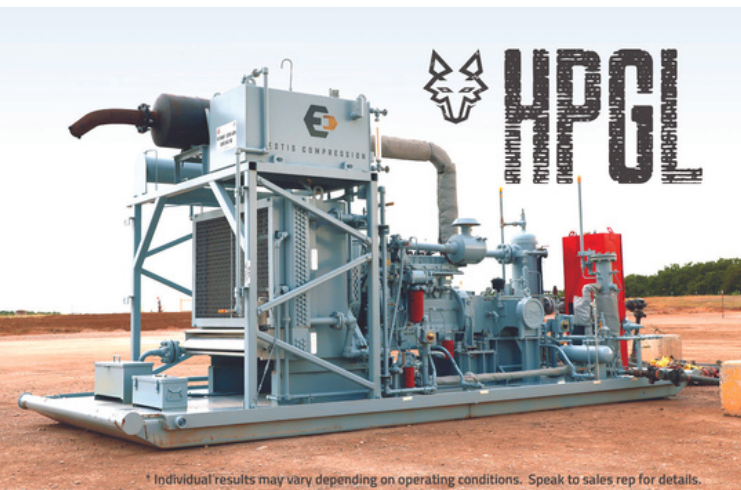
Wednesday, 19 April (continued)

TTS 25th Anniversary Celebration

6:00pm – 8:30pm

Please join one of SPE Oklahoma City Section's long standing and great supporters Thru Tubing Solutions in celebrating their 25th Anniversary. They are coordinating with the SPE OKC Oil and Gas Symposium and raffling off a side-by-side for attendees as well as free entry to their Anniversary Celebration for Symposium attendees. We look forward to seeing you there and being able to celebrate such a great Oklahoma company.

Level 3, Junior Ballroom



MATCHES OR EXCEEDS ESP PRODUCTION VOLUMES

- High-pressure gas is injected down the full length of the production string at total depth, lightening the fluid column
- Increased flow area of the annulus makes high-production rates possible

UP TO 37% LOWER* OPERATING EXPENSE vs ESP

- Zero downhole equipment
- No fishing expeditions and no costly workovers
- The Wolf delivers over 99% mechanical availability



SCAN ME



WE'LL NEVER CHANGE...

Starting with only 4 cement crews, 1 acid truck and 1 tracking crew, Quasar Energy Services, Inc. wasn't always the biggest. We didn't have the most trucks or the largest crews.

What we did have was a reputation for excellence. We had a commitment to delivering quality services with dependable equipment using only the best products available.

So we stood out. We stood out because even though we didn't do big things yet, we always did things right and worked for every client the only way we knew how.

unless IT'S FOR THE BETTER

And over time, year after year, client after client, project after project, things began to change.

The 4 cement crews became 17 cement crews.
The 1 acid crew became 5 acid crews.
The 1 frac crew became 5 frac crews.

But throughout all this growth, innovation and change, one thing stayed the same. Our reputation for excellence.



WHAT CAN QUASAR ENERGY SERVICES, INC. DO FOR YOUR BUSINESS?

We can service

The Permian, Mid-Con, Barnett,
Oklahoma, Eastern New Mexico and
Southern Kansas regions

from our yards located
throughout Texas and Oklahoma.

Call today to schedule and coordinate
any incoming or possible jobs with
our service department.

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SO HERE WE ARE TODAY

After over a decade of delivering the best products and services to the oil and gas industry throughout Texas, Oklahoma, and many surrounding states, we're still doing things the way we did when we started way back in 2008.

- Building true partnerships with our customers.
- Treating every project as if it were our own.
- Working with our partners to achieve great results with the same level of excellence they've come to expect.

FRACTURING

Just because our competition charges less doesn't mean they offer more value. At Quasar Energy Services, Inc., we pride ourselves on delivering quality performance at a fair price. So whether we're working on the smallest of treatments to larger, more complex jobs, we will ensure you're getting exactly what you pay for.

OUR EXPERTISE RUNS DEEP

Our fracturing services are highly sought after by our clients because we're proven time and time again that we can do the work right the first time. Our capabilities include:

- Safe, efficient, high-quality hydraulic fracturing
- Optimized field development that improves production
- We pride ourselves on minimal downtime. In fact, we had no failure down time on locations for all of 2019.

Over **120,000** FRAC HORSEPOWER
divided into **5** SEPARATE FLEETS

WE GO THE EXTRA MILE

As a courtesy to our customers, we also complete a full chemical disclosure for each fracturing job, which can be uploaded directly to their FracFocus account ready for submission.

We perform all kinds of fracturing, including:

- Gelled Oil Fracs
- CO₂ Fracs
- Foam Fracs



Customer Appreciation Event

Celebrating
25
YEARS

Featuring Recording Artist Kylie Morgan

Junior Ballroom, OKC Convention Center
April 19, 2023 6:00 – 8:00

Doors Open at 5:30

Stop by booth #108 at the
SPE OKC Oil and Gas Symposium
to register for event and **a chance**
to win a CanAm Defender
from Jones Powersports.



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