

SPE Liquids – Rich Basins Conference – North America 2017

Midland, Texas, USA
13 – 14 September 2017

ISBN: 978-1-5108-4798-9

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2017) by Society of Petroleum Engineers
All rights reserved.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact Society of Petroleum Engineers
at the address below.

Society of Petroleum Engineers
P. O. Box 833836
Richardson, Texas 75083-3836

Phone: (800) 456-6863
Fax: (972) 952-9435

books@spe.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SESSION 1: STRATEGIC DECISION MAKING

Horizontal Shale Well EUR Determination Integrating Geology, Machine Learning, Pattern Recognition and MultiVariate Statistics Focused on the Permian Basin	1
<i>A. Gaurav</i>	
Cluster Spacing and Well Spacing Optimization Using Multi-Well Simulation for the Lower Spraberry Shale in Midland Basin	20
<i>J. Zhu, J. Forrest, H. Xiong, A. Kianinejad</i>	

SESSION 2: LIQUIDS AND GAS-RICH BASINS: PRACTICE AND ACTIVITY

Stacked Pay Pad Development in the Midland Basin	34
<i>F. Alimahomed, R. Malpani, R. Jose, E. Haddad, E. Arteaga, L. Smith, S. Lati</i>	
Analytical Model to Estimate the Fraction of Fracture Hits in a Multi-Well Pad	49
<i>O. Molina, M. Zeidouni</i>	
Niobrara & Codell Horizontal Well Completions: Lessons Learned Through Post-Stimulation Completion Diagnostics and How These Lessons Can Be Employed To Make Better Wells	73
<i>C. Ramos, M. Warren, S. Jayakumar</i>	
Depressurizing Permian Basin San Andres Residual Oil Zones: A Feasibility Study	91
<i>A. Jamali, A. Etehadtavakkol, M. Watson, O. Zeinuddin</i>	

SESSION 3: PRODUCTION OPERATIONS

A Novel Approach to Distributed Field-Based Gas Lift Facilities	107
<i>S. Mullick</i>	
Production Optimization in the Midland Basin Through Lateral Multiphase Flow Simulation	118
<i>Y. Pradhan, H. Xiong</i>	
Simplifying Wellhead Facilities for Multiphase Production	138
<i>A. Gupta, J. Pitts</i>	
A New, Slickline Accessible Artificial Lift Technology to Optimize the Production Strategy in the Permian Basin	154
<i>G. Wilkes, D. Kimery, J. Saponja, C. Jensen</i>	

SESSION 4: INTEGRATED COMPLETION AND PRODUCTION MONITORING METHODS

A Two-Phase Flow Model for Fractured Horizontal Well with Complex Fracture Networks: Transient Analysis in Flowback Period	163
<i>Z. Chen, W. Yu, X. Liao, X. Zhao, Y. Chen, K. Sepehmoori</i>	
An Integrated Approach to Reduce Water Production in the San Andres Formaton	188
<i>S. Lati, F. Alimahomed, G. Ferrer, T. Pope</i>	
Development of an Empirical Equation to Predict Hydraulic Fracture Closure Pressure from the Initial Shut-in Pressure after Treatment	199
<i>S. Kholy, I. Mohamed, M. Lolo, O. Abou-Sayed, A. Abou-Sayed</i>	

SESSION 6: INTEGRATED COMPLETION AND PRODUCTION MONITORING METHODS

Characterizing the Post Stimulation Time-Dependent Connectivity Between Wells and Across Horizons to Develop a Robust In-Fill Drilling Program	215
<i>B. Cherian, L. Armentrout, C. Baruah, J. Ballmer, A. Malicse, S. Narasimhan, O. Olaoye</i>	
Improving Oil Recovery in Unconventional Liquid Reservoirs by Soaking-Flowback Production Schedule with Surfactant Additives	230
<i>J. Alvarez, F. Tovar, D. Schechter</i>	

A Unified and Integrated Approach for Reservoir and Fluid Characterization Using Minimal Production and Well Data for the Mississippian Meramec Interval Within the STACK Play of Oklahoma	248
<i>B. Cronk, M. Gogri, J. Ortiz, S. Kalra, A. Cullen, M. Pranter, Z. Reza</i>	

SESSION 7: DRILLING AND COMPLETIONS

Hydrogen and Helium Detection for Drilling a Lower-Cost Well	264
<i>R. Keller, M. Rowe</i>	
Latest Drilling Techniques Applied to Coring Operations of a Complex Subsurface Geology in WCSB Led to Operational Success and Cost Savings While Setting a Record in North America	272
<i>A. Hooshmandkoochi, F. Shirkavand, R. Prokopchuk, N. Osayande, A. Sadat, A. Minhas</i>	
Improving Drilling Reliability Through Advanced Drilling Dynamics Models	286
<i>V. Gandikota, N. Chennoufi</i>	
Polyelectrolyte Complex Stabilized CO₂ Foam Systems for Hydraulic Fracturing Application	293
<i>R. Anandan, S. Johnson, R. Barati</i>	

SESSION 8: STIMULATION DESIGN

Accounting for Production Shadow in Infill/DUC Well Hydraulic Fracturing Modeling and Calibration	312
<i>D. Gonzalez, R. Holman, R. Richard, H. Xue, A. Morales, C. Kwok, T. Judd</i>	
Low Density Proppant in Slickwater Applications Improves Reservoir Contact and Fracture Complexity - A Permian Basin Case History	326
<i>K. Jackson, O. Orekha</i>	
Effect of Dilute Acid on Hydraulic Fracturing of Carbonate Rich Shales – Experimental Study	346
<i>T. Teklu, D. Park, H. Jung, K. Amini, H. Abass</i>	
Complex Toe-to-Heel Flooding: A Completion Strategy to Increase Oil Recovery from Sandstone Formations	369
<i>A. Algarhy, M. Soliman, L. Heinze, S. Gorell, S. Henderson, H. Nasr-El-Din</i>	

SESSION 10: KNOWLEDGE SHARING POSTERS

Incorporating the Effect of Pyrite on Total Organic Carbon Estimation in Eagle Ford Shale	382
<i>S. Jiang, M. Mokhtari, D. Borrok</i>	
An Experimental Study of Acid Matrix Treatment Performance On Shale Core Samples	396
<i>R. Khalil, A. Mansour, T. Gamadi</i>	
Author Index	