

SPE Oklahoma City Oil and Gas Symposium 2017

Oklahoma City, Oklahoma, USA
27 – 31 March 2017

ISBN: 978-1-5108-4549-7

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: WELL CONSTRUCTION – COMPLETIONS I

Self-Removing Fracturing Plugs: A Study of Initial Adoption in the Williston Basin	1
<i>M. Nichols, A. Eis</i>	
Applications of Viscosity-Building Friction Reducers as Fracturing Fluids	12
<i>M. Domelen, W. Cutrer, S. Collins, M. Ruegamer</i>	
A Case Study of Energy Storage Stimulation for Ultra-Low Permeability Oil Reservoir	25
<i>W. Liu, K. Zhang, T. Jiang, L. Yu, Z. Bao, J. Lv</i>	
Study and Application of Novel Low Damage Stimulation Technology in Sulige Tight Gas Field	35
<i>Y. Duan, B. Guan, Y. Xu, Z. Yang, Y. Lu, Z. Tian, X. Yu</i>	
Optimization of Hydraulic Fracture Development and Well Performance Using Limited Entry Perforations	42
<i>J. Huang, A. Datta-Gupta, J. Augustine</i>	

SESSION 2: REMEDIATION

Horizontal Production Logging Service Quality Best Practices Utilizing Procedural Flow Chart Methods	58
<i>D. Heddleston</i>	
Experimental Study and Pilot Test of Combined Gel Treatment and Surfactant Imbibition Technology in High Temperature, High Salinity Reservoir	67
<i>H. Cai, W. Luo, D. Ma, X. Zhou, J. Fan, J. Li, J. Sun, Y. Zhang</i>	
A Novel Cement System to Ensure Slurry Stability in Horizontal Well	79
<i>A. Doan, A. Holley, L. Li, M. Kellum</i>	
Chelating Agents in Productivity Enhancement: A Review	88
<i>T. Almubarak, J. Ng, H. Nasr-El-Din</i>	
Pit Management Strategies: Monitoring, Souring, and Freeze Controls	113
<i>C. Maugans, N. Banda</i>	

SESSION 3: WELL CONSTRUCTION – DRILLING

OCTG Advancements in Casing Drilling: Where We Have Been and Where Are We Going?	124
<i>O. Grijalva, J. Holzmann, J. Oppelt, N. Perozo, A. Asgharzadeh</i>	
PTA Powder Hardbanding Provides Cost Savings and Extends Life of Drill Pipes in Permian Basin Formations	144
<i>E. Omojuwa, J. Acquaye, J. Hart, E. Okoye</i>	
Low-Solids-Shear Dependent Cement System Eliminates Loss Circulation in the Upper Spraberry Formation in the Permian Basin: A Case History	160
<i>M. Duffy, O. Hernandez, G. Rojo</i>	
Barite Nanoparticles Reduce the Cement Fluid Loss	169
<i>A. Atashnezhad, T. Coryell, G. Hareland</i>	
Geopolymer Cements: How Can You Plug and Abandon a Well with New Class of Cheap Efficient Sealing Materials	184
<i>S. Salehi, M. Khattak</i>	

SESSION 5: FORMATION EVALUATION

Development of a Cement Repository to Improve the Understanding of Well Integrity Behavior with Time	195
<i>A. Ichim, C. Teodoriu</i>	
Lateral Wellbore Rock Characterization and Hydraulic Fracture Optimization Utilizing Drilling Cuttings and Mud Log in Cleveland Sand: A Case Study	207
<i>S. Stolyarov, D. Gadzhimirzaev, S. Sadykhov, B. Ackley, C. Lipp</i>	

In-Situ Poisson's Ratio Determination under Different Deformational Conditions	219
<i>S. Baldino, S. Rafieepour, S. Miska</i>	
Evaluating Multiple Methods to Determine Porosity from Drilling Data	234
<i>A. Cedola, A. Atashnezhad, G. Hareland</i>	

SESSION 6: RESOURCE DEVELOPMENT I

Studies on New Chemical Tracers for Determination of Residual Oil Saturation in the Inter-Well Region	247
<i>M. Silva, H. Stray, T. Bjornstad</i>	
Capillary Pressure, Fluid Distribution, and Oil Recovery in Preserved Middle Bakken Cores	261
<i>S. Karimi, H. Kazemi, G. Simpson</i>	
Numerical Simulation of CO₂-EOR and Storage Potential in the Morrow Formation, Ochiltree County, Texas	287
<i>W. Ampomah, R. Balch, M. Cather, D. Rose-Coss, E. Gragg</i>	
Quantification of the Microstructure Heterogeneities of Bakken Shale Reservoirs from Multi-Fractal Analysis	305
<i>K. Liu, M. Ostadhassan</i>	
A Rock-on-a-Chip Approach to Study Fluid Invasion and Flowback in Liquids-Rich Shale Formations	315
<i>K. He, L. Xu, X. Yin, K. Neeves</i>	

SESSION 7: WELL CONSTRUCTION – COMPLETIONS II

A Practical Guide to Modern Diversion Technology	323
<i>M. Domelen</i>	
Applying Enhanced Cyclic Diversion Process in Granite Wash Open Annulus Horizontal Completion	345
<i>L. Sullivan, B. Grieser</i>	
Using Water Hammer Characteristics as a Fracture Treatment Diagnostic	355
<i>J. Iriarte, J. Merritt, B. Kreyche</i>	
Application of Microproppant in the SCOOP Woodford to Improve Well Production	369
<i>J. Calvin, B. Grieser, T. Bachman</i>	

SESSION 9: RESOURCE DEVELOPMENT II

Optimizing Shale Development: Another Approach By Means of Multilateral Wellbores	388
<i>D. Durst</i>	
Water Flowback Analysis and Hydraulic Fracture Characterization in Marcellus Unconventional Reservoir	409
<i>T. Yang, X. Wu</i>	

SESSION 10: WELL PRODUCTION AND ECONOMICS

Using Type Wells to Economically Schedule DUC Well Completions	420
<i>T. Dash, D. Scott, C. Kwok</i>	
Interrelating Production Analysis with Pore Scale Structure in the Bakken Reservoir	430
<i>M. Grella, J. Callard</i>	
Innovating in the Oil and Gas Industry: A Framework for Aligning Innovation Strategy and Tactics	441
<i>J. Redden, C. Strickland</i>	
Gas Lift Production Benchmarking Using IPR Risked Inflow Modeling: Case Study	453
<i>S. Bagci</i>	
Author Index	