

# **SPE Western Regional Meeting 2017**

Bakersfield, California, USA  
23 - 27 April 2017

Volume 1 of 2

ISBN: 978-1-5108-4199-4

**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](mailto: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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## VOLUME 1

<b>Above-Zone Pressure Response to Distinguish Between Fault and Caprock Leakage</b> .....	1
<i>Mosaheb, Mojtaba; Zeidouni, Mehdi</i>	
<b>Acoustoelastic Estimation of the In Situ Stresses from Sonic Logs for a Carbonate Reservoir</b> .....	15
<i>Samnejad, M.; Aminzadeh, F.; Bubshait, A.</i>	
<b>Analytical Cyclic Steam Modeling Revisited and Applied to the Shallow Low Permeability California Diatomite</b> .....	29
<i>Elias, Ramon; Medizade, Mason</i>	
<b>Application of Pressure Transient Analysis and 4D Seismic for Integrated Waterflood Surveillance- A Deepwater Case Study</b> .....	43
<i>Suleen, Fnu; Oppert, Shauna; Chambers, Geordie; Libby, Lauren; Carley, Shane; Alonso, Daniel; Dygert, Todd; Olayomi, Joe</i>	
<b>Application of the Galerkin's Finite Element Method to the Flow of Power-Law Non-Newtonian Fluids through Porous Media</b> .....	56
<i>Omosebi, O. A.; Akabogu, A. K.</i>	
<b>Asphaltenes: What Do We Know So Far</b> .....	71
<i>Al-Qasim, Abdulaziz; Bubshait, Ahmed</i>	
<b>Assessing Current and Potential Basin Assets Using an Innovative Predictive Analytics Workflow</b> .....	90
<i>Gbededo, Midowa; Stone, Mindy; Beaver, Philip; Lee, Young Jin</i>	
<b>Assessing Cybersecurity Risk for Oil &amp; Gas Mergers and Acquisitions</b> .....	106
<i>Hosseini, Kayvon; Paul, Donald L.</i>	
<b>Assessment of Rate Transient Analysis Techniques for Multiphase Flow in Unconventional Reservoirs: Application to Eagle Ford Formation</b> .....	118
<i>Uzun, Ilkay; Eker, Erdinc; Cho, Younki; Kazemi, Hossein; Rutledge, J. M.</i>	
<b>Augmented Text Mining for Daily Drilling Reports using Topic Modeling and Ontology</b> .....	132
<i>Arumugam, Sethupathi; Rajan, Shebi; Gupta, Sanjay</i>	
<b>Candidate Trees for Terrestrial Carbon Storage in Regions with High Air Pollution and High Water Stress</b> .....	141
<i>Saini, D.</i>	
<b>Case Histories of Solvent Use in Thermal Recovery</b> .....	149
<i>Bayestehparvin, Bitia; Ali, S. M. Farouq; Abedi, Jalal</i>	
<b>A Case History on California Immiscible Gas Injection, Elk Hills Field</b> .....	167
<i>Kostelnik, Keith; Arredondo, Pedro; Montenegro, Ana</i>	
<b>A Case Study of Formation Testing in Antelope Shale</b> .....	177
<i>Lal, Manish K.; Tran, Viet H.; Singh, Amit</i>	
<b>Case Study of Section Milling Field Run Leads to Technology Design Optimization Using Advanced Numerical Simulations and Modeling</b> .....	189
<i>Deshpande, Kedar; Haq, Mohammed A.; Smalley, Michael</i>	
<b>Casing Vapor Recovery Optimization and Heavy Oil Maximization Through Seasonal Effects</b> .....	197
<i>Gentile, Lauren; Larner, Erin</i>	
<b>Characterizing Alaska Overburden</b> .....	206
<i>McNeal, Josh; Huhndorf, Sid; Craig, Jon; Atashbari, Vahid</i>	
<b>Clarifying and Improving the Application of Waterflood Analytical Methods in X-Plot Conditions – From Empirical Approach to Analytical Approach</b> .....	217
<i>Yang, Zhengming</i>	
<b>Comparison of Steam and Polymer Injection for the Recovery of Heavy Oil</b> .....	234
<i>Delamaide, Eric</i>	
<b>Compositional Simulation Evaluation of Miscible Gas Injection Performance in Tight Oil Formation</b> .....	260
<i>Mansour, Ahmed GH; Khalil, Rayan; Gamadi, Talal</i>	
<b>A Comprehensive Multi-Platform Petroleum Engineering Toolbox for Oil and Gas Industry</b> .....	277
<i>Balaji, Karthik; Suhag, Anuj; Ranjith, Rahul; Tuna, Tayfun; Temizel, Cenk</i>	
<b>Conditioning Multiple-Point Geostatistical Facies Simulation on Nonlinear Flow Data Using Pilot Points Method</b> .....	288
<i>Ma, Wei; Jafarpour, Behnam</i>	
<b>Coupled Flow and Geomechanical Modeling of Reservoir Seismicity: Effects of Hydraulic Communication and Well Type</b> .....	306
<i>Asaithambi, Renuha; Jha, Birendra</i>	

<b>Cyclic Steam Injection Modeling and Optimization for Candidate Selection, Steam Volume Optimization, and SOR Minimization, Powered by Unique, Fast, Modeling and Data Assimilation Algorithms</b> .....	318
<i>Sharma, Pallav; Fowler, Garrett; Henning, Mark; Kyriacou, Stylianos; Thakur, Ganesh; Sloss, Dakin; Shipley, Wyatt</i>	
<b>Design and Interpretation of an Interference Test for Determination of Formation Compressibility in a Deepwater Reservoir</b> .....	333
<i>Suleen, Fnu; Urbanczyk, Chris; Williams, George; Kamal, Med</i>	
<b>Developing a Smart Proxy for the SACROC Water-Flooding Numerical Reservoir Simulation Model</b> .....	349
<i>Alenezi, Faisal; Mohaghegh, Shahab</i>	
<b>Development of a Fully Coupled Thermo-Hydro-Mechanics Simulator Using Automated Solution Framework</b> .....	361
<i>Meguerdijian, S.; Jha, B.</i>	
<b>Digital Rock Simulation: A Novel Approach for Accurate Characterization of Perforation Tunnel Damage</b> .....	371
<i>Satti, Rajani P.; Bale, Derek S.; Zuklic, Stephen N.; Koliha, Nils; Crouse, Bernd; Balasubramanian, Gana; Freed, David M.</i>	
<b>A Distance Transform Method for History Matching of Discrete Geologic Facies Models</b> .....	386
<i>Elahi, Siavash Hakim; Jafarpour, Behnam</i>	
<b>Doctrines and Realities in Reservoir Engineering</b> .....	402
<i>Vittoratos, Euthymios; Kovscek, Anthony</i>	
<b>The DUC Hunt: Concerns and Clarifications for Drilled Uncompleted Wells. What to Expect?</b> .....	430
<i>Srinivasan, Karthik; Krishnamurthy, Jayanth; Kaufman, Peter</i>	
<b>DyMAS: A Direct Multi-Scale Pore-Level Simulation Approach</b> .....	449
<i>Peyman, Mohammadmoradi; Apostolos, Kantzas</i>	
<b>Economic Potentials of a Carbon Market on American Oil Industry: A System Dynamics Approach</b> .....	464
<i>Rafieisakhaei, Mohammadhussein; Barazandeh, Babak</i>	
<b>Effect of in Situ Emulsification on Heavy Oil and Water Relative Permeability</b> .....	477
<i>Sarwaruddin, Mohammad; Burzjaff, Alan A</i>	
<b>Efficient Modeling and History Matching of Shale Oil Reservoirs Using the Fast Marching Method: Field Application and Validation</b> .....	490
<i>Iino, Atsushi; Vyas, Aditya; Huang, Jixiang; Datta-Gupta, Akhil; Fujita, Yusuke; Bansal, Neha; Sankaran, Sathish</i>	
<b>Electrical Resistivity Autonomous Inflow Control Device ER-AICD</b> .....	518
<i>Jadhav, Nachiket; Zhambrovskii, Dmitrii</i>	
<b>An Empirical Model to Estimate a Critical Stimulation Design Parameter Using Drilling Data</b> .....	529
<i>Atashnezhad, Amin; Cedola, Alexandra E.; Hareland, Geir</i>	
<b>Errors Associated with Waterflood Monitoring Using the Hall Plot for Stacked Reservoirs in the Absence of Profile Surveys</b> .....	538
<i>Qi, Qianru; Pepin, Sophie; AlJazzaf, Abdula; Ershaghi, Iraq</i>	
<b>Errors in Prediction of Recoveries from Unconventional Resources with Analytical Methods that Ignore the Physics of the Flow</b> .....	549
<i>Jaiswal, Aaditi; Alabdulbaqi, Nibras; Alsafar, Ali; Ershaghi, I.</i>	
<b>An Experimental Study of CO2 Saturated Brine Reaction with Berea Sandstone</b> .....	567
<i>Chen, Peng; Saeedi, Ali; Noble, Ryan</i>	
<b>Fiber Technology Improves Cement Bonding and Eliminates Sustained Casing Pressure</b> .....	574
<i>Eulberg, J.; Hudson, M.</i>	
<b>Finite Element Modeling of Reservoir Heating By An Electrical Cable</b> .....	585
<i>Medizade, M. M.; Summers, J. T.</i>	
<b>Flow Control Devices in SAGD Completion Design: Enhanced Heavy Oil/Bitumen Recovery Through Improved Thermal Efficiencies</b> .....	594
<i>Banerjee, Sudiptya; Hascakir, Berna</i>	
<b>Fracture Propagation, Leakoff and Flowback Modeling for Tight Oil Wells Using the Dynamic Drainage Area Concept</b> .....	612
<i>Clarkson, C. R.; Qanbari, F.; Williams-Kovacs, J. D.; Zanganeh, B.</i>	
<b>Gelled Isolation Fluid Makes Refracturing Well Feasible</b> .....	631
<i>Wheeler, Richard; Williams, V.; Mayor, J.; Khan, S.; Everson, N.; Steinhardt, A.</i>	
<b>Get Everyone on the Same Curve: Driving Continuous Improvement with Drilling Data Fidelity from Rig to Onshore</b> .....	645
<i>Sharma, Meenu; Little, Robert; Arumugam, Sethupathi; Wang, Sophie</i>	
<b>Heavy Oil Recovery from Opal-CT Diatomite</b> .....	650
<i>Dietrich, J. K.</i>	

<b>High-Temperature Imbibition for Enhanced Recovery from Diatomite</b> .....	677
<i>Kim, Tae Wook; Kovscek, Anthony</i>	
<b>Hydraulic Fracture Propagation Modeling for Well Performance Analysis: Eagle Ford Formation Case Study</b> .....	698
<i>Eker, Erdinc; Uzun, Ilkay; Kazemi, Hossein; Rutledge, J. M.</i>	
<b>The Impact of the Hydraulic Fracture Properties on the Gas Recovery from Marcellus Shale</b> .....	708
<i>El Sgher, M.; Aminian, K.; Ameri, S.</i>	
<b>Improved Oil Recovery Estimation with Data Analytic Methods: A Workflow for Open Data Analysis</b> .....	720
<i>Kronkosky, Chad E.; Kronkosky, Blake C.; Etehadtavakkol, Amin</i>	
<b>Improving Rollover Crashworthiness of Heavy Trucks Equipped with Towers and Booms Overhanging the Cab</b> .....	732
<i>Friedman, K; Hutchinson, J; Bui, K; Mattos, G.; Bozzini, S</i>	
<b>Incorporation of Formation Water into Rate-Transient Analysis of Tight Oil Wells with High Water-Oil Ratio: A Field Example from North America</b> .....	740
<i>Qanbari, F.; Clarkson, C. R.; Shahamat, M. S.</i>	
<b>Injectivity Behavior of Copolymer and Associative Polymers Decoded Using Extensional Viscosity Characterization: Effect of Hydrophobic Association</b> .....	755
<i>Azad, Madhar Sahib; Trivedi, Japan J</i>	
<b>InSAR: Pro-Active Technology for Monitoring Environmental Safety and for Reservoir Management</b> .....	775
<i>Leezenberg, Pieter; Allan, Malcolm</i>	
<b>Integrated Reservoir Characterization of the Middle Bakken in the Blue Buttes Field, Williston Basin, North Dakota</b> .....	794
<i>Alexeyev, Alan; Ostadhassan, Mehdi; Bubach, Bailey; Boualam, Aldjia; Djeddar, Sofiane</i>	
<b>An Integrated Workflow for Completion and Stimulation Design Optimization in the Avalon Shale, Permian Basin</b> .....	805
<i>Ajjsafe, Foluke; Shan, Dan; Alimahomed, Farhan; Lati, Shrutesh; Ejofodomi, Efe</i>	
<b>Investigating Impact of Various Properties on Relative Permeability and Non-Wetting Phase Fractional Flow in Brine/Oil System in Water-Wet Reservoir Rock by Numerical Simulation</b> .....	820
<i>Jahan, Farjana; Hossain, Md Mofazzal; Ahmed, Shakil; Iglauer, Stefan</i>	

## VOLUME 2

<b>Investigation of Rheological and Filtration Properties of Water-Based Drilling Fluids Using Various Anionic Nanoparticles</b> .....	837
<i>Salih, A. H.; Bilgesu, H.</i>	
<b>IOR Methods in Unconventional Reservoirs of North America: Comprehensive Review</b> .....	858
<i>Alfarge, Dheiaa; Wei, Mingzhen; Bai, Baojun</i>	
<b>Lessons Learned from the Field-Scale Simulation of the Gas-Assisted Gravity Drainage GAGD Process in Heterogeneous Sandstone Oil Reservoirs</b> .....	882
<i>Al-Mudhafar, Watheq J.; Rao, Dandina</i>	
<b>Life After CHOPS: Alaskan Heavy Oil Perspective</b> .....	914
<i>Mathur, Bakul; Dandekar, Abhijit Y.; Khataniar, Santanu; Patil, Shirish L.</i>	
<b>Making Sense of Why Sometimes Logs Do Not See Cement in the Annulus</b> .....	928
<i>Kalyanraman, Ram Sunder; Van Kuijk, Robert; Hori, Hiroshi</i>	
<b>Material Balance Applied to Dynamic Reservoir Surveillance Patterns</b> .....	951
<i>Batycky, Rod P.; Thiele, Marco R.; Razavi, Mahdi</i>	
<b>Midway-Sunset 35Z Case Study: A Journey from Geo-Cellular Grids to Field Operations</b> .....	966
<i>Ardali, Mojtaba; D'Cruz, Ryan; Erickson, Telann; Moustakis, Michael; Salameh, Mourad</i>	
<b>Mobilization of Trapped Residual Oil via Secondary SAGD with Propane</b> .....	982
<i>Kar, T.; Nezhad, P. B.; Ng, A. Z. Y.; Ovalles, C.; Benson, I. P.; Hascakir, B.</i>	
<b>A Neural Network Approach for Modeling Water Distribution System</b> .....	990
<i>Popa, Andrei S.; O'Toole, Conor; Munoz, Juan; Cassidy, Steve; Tubbs, Dallas, Ershaghi, Iraj</i>	
<b>A New Method for Geomechanical Modeling of Subsidence Induced Deformation in Fractured Rocks Subjected to Hydraulic Fracturing</b> .....	1005
<i>Qi, Qianru; Jha, Birendra</i>	
<b>A New Method of Calculating Rig Parameters and its Application in Downhole Weight on Bit Automation in Horizontal Drilling</b> .....	1013
<i>Wu, Z.; Hareland, G.; Loggins, S. M.; Lai, S.; Eddy, A.; Olesen, L.</i>	
<b>A Novel Adaptive Non-Linear Regression Method to Predict Shale Oil Well Performance Based on Well Completions and Fracturing Data</b> .....	1022
<i>Bakshi, Amol; Uniacke, Eric; Korjani, Mehdi; Ershaghi, Iraj</i>	

<b>A Novel Granular Profile Control Agent for Steam Flooding: Synthesis and Evaluation</b> .....	1034
<i>Wang, Hongsheng; Rabiei, Minou; Lei, Guanglun; Wang, Sai</i>	
<b>Observations in the Loss of Well Productivity with High Solid/Liquid Ratios During Frac Jobs</b> .....	1044
<i>Gao, Song; Ershaghi, Iraj</i>	
<b>Oilfield Scale Removal by Chelating Agents: An Aminopolycarboxylic Acids Review</b> .....	1053
<i>Almubarak, Tariq; Ng, Jun Hong; Nasr-El-Din, Hisham</i>	
<b>On Estimation of Horizontal Well Effective Lateral Length and Reservoir Properties from Well Test Data</b> .....	1066
<i>Qi, Qianru; Bethel, Katarina; Ershaghi, Iraj</i>	
<b>Operational Experience with Fiber Optic Systems in Horizontal Steam Injectors</b> .....	1079
<i>Shirdel, M.; Buell, R. S.; Wells, M.</i>	
<b>Optimization of Metal-on-Metal Lubricants for Coil Tubing Applications</b> .....	1101
<i>Sherman, Scott; Quintero, Harvey; Moriyama, Candace; Sessarego, Sebastian; Fraser, Craig</i>	
<b>Optimization of Recovery in Waterfloods with Bang-Bang Control in Reservoirs with Subsidence and Uplift</b> .....	1123
<i>Balaji, Karthik; Suhag, Anuj; Ranjith, Rahul; Yegin, Cengiz; Saracoglu, Onder; Hendroyono, Arief; Dhannoon, Diyar</i>	
<b>Optimization of Steamflooding Heavy Oil Reservoirs</b> .....	1168
<i>Suhag, Anuj; Ranjith, Rahul; Balaji, Karthik; Peksaglam, Zumra; Malik, Vidhi; Zhang, Ming; Biopharm, Frontida; Putra, Dike; Wijaya, Zein; Dhannoon, Diyar; Temizel, Cenk</i>	
<b>Optimizing Well Locations in Green Fields using Fast Marching Method: Optimize Well Locations without Upscaling using Hundreds of Scenarios and Realizations with High Accuracy in Minutes</b> .....	1204
<i>Al-Qasim, Abdulaziz; Kelkar, Mohan; Bubshait, Ahmed</i>	
<b>Organic and Inorganic Formation Damage Removal Using Customized Formulations</b> .....	1227
<i>Quintero, Lirio; Newberry, Michael; Morales, Rosanel; Davis, Chelsea</i>	
<b>The Patented HyperScratcher Workover Tool – Increasing Production on Existing Wells</b> .....	1237
<i>Tuttle, John D.</i>	
<b>Positive Correlation Between Historical Oil Production and Well Stimulation Response</b> .....	1244
<i>Jamali, Ali; Etehadavakkol, Amin; Fan, Dian; Moallem, Golnaz</i>	
<b>Potential Use of Oil-Field Produced Water as Base Fluid for Hydraulic Fracturing Operations: Effect of Water Chemistry on Crosslinking and Breaking Behaviors of Guar Gum-Based Fracturing Fluid Formulations</b> .....	1259
<i>Saini, Dayanand; Mezei, Timea</i>	
<b>Producer Well Temperature Control and Optimal Oil Production During a Steamflood</b> .....	1270
<i>Agarwal, Anshul; Kovscek, Anthony R.</i>	
<b>Production Optimization Through Utilization of Smart Wells in Intelligent Fields</b> .....	1284
<i>Ranjith, Rahul; Suhag, Anuj; Balaji, Karthik; Putra, Dike; Dhannoon, Diyar; Saracoglu, Onder; Hendroyono, Arief; Temizel, Cenk</i>	
<b>Proxy-Based Metamodeling Optimization of the Gas-Assisted Gravity Drainage GAGD Process in Heterogeneous Sandstone Reservoirs</b> .....	1313
<i>Al-Mudhafar, Watheq J.; Rao, Dandina N.</i>	
<b>Quantification of Recovery Factors in Downspaced Wells: Application to the Eagle Ford Shale</b> .....	1337
<i>Sinha, Saurabh; Devegowda, Deepak; Deka, Bhabesh</i>	
<b>Quantitative Risk Analysis for Induced Seismicity in Hydraulic Fracturing Versus Waste Water Disposal</b> .....	1355
<i>Hosseini, S. Mehran; Aminzadeh, Fred</i>	
<b>Rapid S-Curve Update Using Ensemble Variance Analysis with Model Validation</b> .....	1361
<i>He, Jincong; Tanaka, Shusei; Wen, Xian-Huan; Kamath, Jairam</i>	
<b>A Real-Time Interactive Drill-Off Test Utilizing Artificial Intelligence Algorithm for DSATS Drilling Automation University Competition</b> .....	1374
<i>Bilgesu, H.; Cox, Z. D.; Elshehabi, T. A.; Smith, C.; Idowu, G. O.; Florence, F. R.</i>	
<b>Recovery Improvement of Gravity Driven Steam Applications Using New Generation Chemical Additives</b> .....	1386
<i>Bruns, Fritjof; Babadagli, Tayfun</i>	
<b>Reinterpretation of Fracture Closure Dynamics During Diagnostic Fracture Injection Tests</b> .....	1403
<i>Zanganeh, B.; Clarkson, C. R.; Hawkes, R. V.</i>	
<b>SAGD Real-Time Production Optimization Using Adaptive and Gain-Scheduled Model-Predictive-Control: A Field Case Study</b> .....	1421
<i>Patel, Rajan G.; Trivedi, Japan J.</i>	
<b>Selective Adsorption and Transport Diffusion of CO<sub>2</sub>-CH<sub>4</sub> Binary Mixture in Carbon-Based Organic Nanopores</b> .....	1453
<i>Kazemi, Mohammad; Takbiri-Borujeni, Ali</i>	

<b>Separating Solids First - Design and Operation of the Multiphase Desander .....</b>	<b>1464</b>
<i>Rawlins, C. Hank</i>	
<b>Sequenced Fracturing Technique with High-Frequency Pressure Monitoring Improves Horizontal Injection Well Performance on the North Slope of Alaska .....</b>	<b>1488</b>
<i>Rutzinger, Gunther; Wages, David; Shrider, James; Robertson, Daniel B.; Hanzik, Cody; Bogdan, Andrey; Keilers, Adam; Oussoltsev, Dmitry</i>	
<b>Simulation Study of In-Depth Gel Treatment in Heterogeneous Reservoirs with Sensitivity Analyses .....</b>	<b>1506</b>
<i>Khamees, T.; Flori, R. E.; Wei, M.</i>	
<b>Steady-State Relative Permeability Upscaling in Multiporosity/Multipermeability Core Assemblages .....</b>	<b>1529</b>
<i>Ramsay, Travis; Hinkley, Richard</i>	
<b>Surface Treatment for Sand Reduces Airborne Dust .....</b>	<b>1550</b>
<i>O'Neil, Bill; Quintero, Harvey; Wang, Chuanzhong; Smekalin, Nadia; Lu, Weibing; Zhang, Kewei</i>	
<b>Temperature Transient Analysis for Characterization of Multilayer Reservoirs with Crossflow .....</b>	<b>1563</b>
<i>Mao, Yilin; Zeidouni, Mehdi</i>	
<b>Testing and Calibration of a Low-Cost Custom Geomechanical Properties Testing System .....</b>	<b>1583</b>
<i>Sultan, U.; Saini, D.</i>	
<b>Use of Decline Curve Analysis for Application of Production Enhancement Treatments in Heavy Oil Reservoirs .....</b>	<b>1591</b>
<i>Castro, Leo</i>	
<b>The Use of Voronoi Mapping for Production Growth in a Heavy Oil Field .....</b>	<b>1600</b>
<i>Sharma, Jyotsna; Popa, Andrei; Tubbs, Dallas; Cassidy, Steve</i>	
<b>Using Data-Driven Technologies to Accelerate the Field Development Planning Process for Mature Field Rejuvenation .....</b>	<b>1610</b>
<i>Brown, Jeremy B.; Salehi, Amir; Benhallam, Wassim; Matringe, Sebastien F.</i>	
<b>Waterflood Planning and Piloting in a Tight Sandstone with Stimulated Wells: Buena Vista Nose Case Study .....</b>	<b>1630</b>
<i>Omelchenko, Roman; Wang, Guanglan; Klepacki, Doug; Cooper, Marc</i>	
<b>Workover Well Operations to Restore Full Reservoir Access in an Underground Natural-Gas-Storage Cavern: A Case Study for Developing New Technology in Dual-String Section Milling Methods .....</b>	<b>1648</b>
<i>Smalley, Michael T.; Teale, David W.; Haq, Mohammed A.</i>	
<b>Author Index</b>	