

Society of Petroleum Engineers

# SPE Annual Technical Conference and Exhibition

ATCE 2008

September 21-24, 2008  
Denver, Colorado, USA

Volume 1 of 7

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571  
[www.proceedings.com](http://www.proceedings.com)

ISBN: 978-1-60560-482-4

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

# Copyright and Use Restrictions

Copyright 2008, Society of Petroleum Engineers

Material included in this *Proceedings* is copyright protected. Electronic reproduction, distribution, or storage of any part of a SPE-copyrighted paper for commercial purposes without the written consent of the Society of Petroleum Engineers is prohibited. Permission to reproduce in print is restricted to an abstract of not more than 300 words; illustrations may not be copied. The abstract must contain conspicuous acknowledgment of where and by whom the paper was presented. For photocopying beyond the above permissions, libraries and other users dealing with the Copyright Clearance Center (CCC) Transactional Reporting Service must pay a base fee of \$3 per copyrighted article plus \$0.25 per page to CCC, 222 Rosewood Drive, Danvers, Massachusetts 01923 U.S.A. For other permissions, contact Librarian, SPE, 222 Palisades Creek Drive, Richardson, Texas 75080-2040 U.S.A. Use of SPE member or author contact information included on this CD for commercial purposes or reproduction of that information in whole or in part, in any form or medium, is strictly prohibited and subject to legal action. Contact SPE to inquire about rental of mailing lists.

This CD of the 2008 SPE Annual Technical Conference and Exhibition was produced by SPE. Permission to print and distribute content from this product must be obtained from SPE. Duplication of replication products is absolutely prohibited without written permission from SPE and Adobe. Adobe, the Adobe logo, and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Material on the CD was reproduced from original papers and/or electronic files provided by the authors. Some discrepancies are inevitable. Please advise SPE of errors so corrections can be made to the electronic versions of the article. Send corrections by e-mail to [pdf@spe.org](mailto:pdf@spe.org) or mail to the SPE Americas Office, attention Technical Paper Administrator.

Society of Petroleum Engineers

SPE Annual Technical Conference and Exhibition  
2008

**TABLE OF CONTENTS**

**Volume 1**

<b>SPE 112028 Creating a Sustainable Step Change in Safety from an Innovative Self Evaluation Programme</b> .....	1
<i>D. Allan, SPE, and Kenneth A. Lang, SPE, Baker Hughes</i>	
<b>SPE 113233 An ICA Approach to Purify Components of Spatial Components of Seismic Recordings</b> .....	6
<i>Arash Moaddel Haghghi, SPE, Petroleum University of Technology; and Iman Moaddel Haghghi, SPE, University of Tehran, Physics Department</i>	
<b>SPE 113374 The Art of Mentoring as Told by Both Sides of the 3-Decade-Old Struggle in the Petroleum Industry</b> .....	13
<i>J.T. Edwards and G.T. Woo, BJ Services Co.</i>	
<b>SPE 113752 An Empirical Model for Estimating the Rock Lithology and the Cation Exchange Capacity from Dielectric Permittivity Data</b> .....	18
<i>Ali A. Garrouch and Eissa M. Alsafran, Petroleum Engineering Department, Kuwait University, and Karim F. Garrouch, Institut Supérieur de Gestion, Sousse, Tunisia</i>	
<b>SPE 113805 New Electro-Mechanical Perforating Technology Reduces Cost and Increases Safety in Workover Operations</b> .....	48
<i>Riyadh A. Bargawi, Saudi Aramco, and Doyle Dean, Jack Clemens, and Clem Whitmire, Halliburton Company</i>	
<b>SPE 113829 Improving Well Safety and Maximizing Reserves Using an Innovative Surface Controlled Subsurface Safety Valve (SC-SSSV)</b> .....	57
<i>François Millet, Hervé Petit, and Gery Wallez, Geoservices Equipements and Philippe Lalanne, Alain Ducasse and Emile Barzu, Total E&amp;P France</i>	
<b>SPE 113883 Dynamic Buckling and Snaking Motion of Rotating Drilling Pipe in a Horizontal Well</b> .....	65
<i>Guohua Gao, SPE, Chevron Corp., and Stefan Miska, SPE, University of Tulsa</i>	
<b>SPE 113932 Hydraulic Fracture Feasibility, Design, On-Site Supervision and Post Job Evaluation in Southeast Pakistan Gas Fields</b> .....	77
<i>E.P. Lolon and D.J. Quirk, Pinnacle Technologies; C.K. Enzendorfer, OMV UK; U.B. Bregar and S.Q. Shah, OMV Pakistan; and M.J. Mayerhofer and C.L. Cipolla, Pinnacle Technologies</i>	
<b>SPE 114011 Revised Big Bore Well Design Recovers Original Bayu-Undan Production Targets</b> .....	91
<i>L. B. Ledlow, W. W. Gilbert, N. P. Omsberg, G. J. Mencer and D. P. Jamieson, ConocoPhillips</i>	
<b>SPE 114219 History Match and Reserve Evaluation of Hydraulically Fractured Wells: Low Permeability Field Case History</b> .....	105
<i>I. Colombo, G. Fanello, S. Valzania, SPE, ENI E&amp;P, D. Isella, SPE, L. Tealdi, SPE, ENI CONGO</i>	
<b>SPE 114232 Instruments of Support at Emergency Response Planning in Urban Environment Situated at the Peripheral Area Around Industrial Facilities</b> .....	121
<i>G.C. Sandres, SPE, C. Silva, and L. Chaves, Fondation COPPETEC</i>	

<b>SPE 114273 Casing Ultradeep, Ultralong Salt Sections in Deep Water: A Case Study for Failure Diagnosis and Risk Mitigation in Record-Depth Well</b> .....	129
<i>Jincai Zhang, Shell Oil Company, William Standiford, Knowledge Systems, Inc. (a Landmark Graphics Corporation company); and Chris Lenamond, Nexen Petroleum U.S.A., Inc.</i>	
<b>SPE 114323 Gas Shut-off Treatment in Oil Carbonate Reservoirs in Saudi Arabia</b> .....	153
<i>A.M. Al-Dhafeeri, SPE, Saudi Aramco, H.A. Nasr-El-Din, SPE, Texas A&amp;M University, H.K. Al-Mubarak, SPE, and J. Al-Ghamdi, SPE, Saudi Aramco</i>	
<b>SPE 114352 Field Case Histories Demonstrating the Critical Roles Played by Multiphase Flow Models in Appropriate Production Log Interpretation</b> .....	165
<i>Liang-Biao Ouyang, SPE, Chevron Energy Technology Company; Polpipat Suthichoti, SPE, Chevron Thailand Exploration &amp; Production Company</i>	
<b>SPE 114375 Analysis of Reservoir Performance of the Messoyakha Gas Hydrate Reservoir</b> .....	185
<i>Tarun Grover, Schlumberger; George J. Moridis, Lawrence Berkeley National Laboratory; Stephen A. Holditch, Texas A&amp;M University</i>	
<b>SPE 114422 Well-Included Flowbased Grid Generation for Heterogeneous Reservoirs</b> .....	203
<i>S.A. Gherabati, B. Dabir, and A. Hesami, Amir-Kabir U. of Technology</i>	
<b>SPE 114478 Identification of Bypassed Pays in Low-Resistivity, Thinly-Bedded, Sand-Shale Sequences in the Ghadames Basin of North Africa Through Use of the Wireline Formation Tester</b> .....	214
<i>Wei-Chun Chu and Paul M. Welch, Pioneer Natural Resources UK</i>	
<b>SPE 114479 A Correlation of the Interfacial Tension between Supercritical Phase CO<sub>2</sub> and Equilibrium Brines as a Function of Salinity, Temperature and Pressure</b> .....	224
<i>D. Brant Bennion, Hycal Energy Research Laboratories Ltd., Calgary, AB, Canada, and Stefan Bachu, Alberta Energy Resources Conservation Board, Edmonton, AB, Canada</i>	
<b>SPE 114592 Determining Environmental Tradeoffs Associated with Low Impact Drilling Systems</b> .....	237
<i>Richard C. Haut, Ph.D., Houston Advanced Research Center, David Burnett, Global Petroleum Research Institute (GPRI), Texas A&amp;M University, John Rogers, Ph.D., Houston Advanced Research Center, Tom Williams, TerraPlatform, LLC</i>	
<b>SPE 114598 Scatter Search for Optimizing the Formation-Rate Analysis (FRA) Model</b> .....	250
<i>Baoyan Li, SPE, Dan Georgi, SPE, and Jianghui Wu, SPE, Baker Hughes</i>	
<b>SPE 114630 Modeling of Drilling Fluid Losses in Naturally Fractured Formations</b> .....	272
<i>R. Majidi, SPE, S.Z. Miska, SPE, M. Yu, SPE, and L.G. Thompson, SPE, The University of Tulsa, and J. Zhang, SPE, BP</i>	
<b>SPE 114648 Discussion on Formation Fluid Density Measurements and Their Applications</b> .....	283
<i>Sophie Godefroy, SPE, Julian Zuo, SPE, Go Fujisawa, SPE, Michael O'Keefe, SPE, Mario Ardila, SPE, Jesús Cañas, SPE, Ilaria de Santo, SPE, and Koksai Cig, SPE, Schlumberger</i>	
<b>SPE 114676 Potential Microbial Enhanced Oil Recovery Processes: A Critical Analysis</b> .....	303
<i>Murray R Gray, Anthony Yeung, and Julia M Foght, University of Alberta, and Harvey W Yarranton, SPE, University of Calgary</i>	
<b>SPE 114689 Calibrating Permeability Heterogeneity at the Core Scale to Static and Dynamic Data</b> .....	328
<i>A. Soltani, SPE, IFP, M. Le Ravalec-Dupin, SPE, IFP, and M. Fourar, SPE, ENSAM</i>	
<b>SPE 114704 A New Multi Laterolog Tool with Adaptive Borehole Correction</b> .....	340
<i>Z. Zhou, B. Corley, R. Khokhar, H. Maurer, and M. Rabinovich, Baker Hughes</i>	
<b>SPE 114705 Nonisothermal and Productivity Behavior of High Pressure Reservoirs</b> .....	358
<i>J.F. App, Chevron Energy Technology Company</i>	

<b>SPE 114739 Biaxial Anisotropy: Its Occurrence and Measurement with Multi-Component Induction Tools</b> .....	377
<i>D. Georgi, SPE, Baker Hughes, J. Schön, Consultant, and M. Rabinovich, SPE, Baker Hughes</i>	
<b>SPE 114747 Paraffin Deposition During the Flow of Water-in-Oil and Oil-in-Water Dispersions in Pipes</b> .....	395
<i>Antonio Bruno, Chevron, Cem Sarica, and Hong Chen, Doris-Inc and Michael Volk, The University of Tulsa</i>	
<b>SPE 114758 The Contradiction in the Lower Tertiary Deepwater GoM</b> .....	409
<i>Nick A. Wiltgen, SPE, Devon Energy Corporation</i>	
<b>SPE 114766 Successful Deployment of Innovative Completion Technology Designed for Multi-Stage Fracturing Treatments in Horizontal Producers Achieved Significant Rate Increase in Saudi Arabia</b> .....	416
<i>J.R. Solares, SPE, C.A. Franco Giraldo, SPE, H.Al-Marri, SPE, H. Al-Hussain, SPE, N. Abualhamayel, SPE, Saudi Aramco, Venkateshwaran Ramanathan, SPE, O.A. Ishteiwy, SPE, Schlumberger, and Bryan Johnson, SPE, Packers Plus</i>	
<b>SPE 114775 Shale Volumes Have Large Uncertainties in the Lower Tertiary Deepwater</b> .....	429
<i>N. Wiltgen, SPE, Devon Energy Corporation</i>	
<b>SPE 114778 Predicting Sorption-Induced Strain and Permeability Increase with Depletion for CBM Reservoirs</b> .....	439
<i>C.R. Clarkson, ConocoPhillips, Z. Pan, CSIRO Petroleum Resources, I. Palmer, Higgs-Palmer Technologies, S. Harpalani, Southern Illinois University Carbondale</i>	
<b>SPE 114796 Characteristic Research of Air Injected Hydrocyclonic Separators</b> .....	456
<i>Minghu Jiang, and Lixin Zhao, Daqing Petroleum Institute; Fuqing Sun, and Rong Tan, Daqing Oilfield Company Ltd.; and Hua Song, Daqing Petroleum Institute</i>	
<b>SPE 114810 Interactions Between Acids and Water-Swelling Elastomers</b> .....	462
<i>A.S. Al-Yami, SPE, Saudi Aramco, H.A. Nasr-El-Din, SPE, Texas A&amp;M University and A.S. Al-Humaidi, SPE, Saudi Aramco</i>	
<b>SPE 114854 Simplified Modeling of Turbidite Channel Reservoirs</b> .....	492
<i>Faruk O. Alpak, SPE, Mark D. Barton, Frans F. van der Vlugt, SPE, Carlos Pirmez, Bradford E. Prather, and Steven H. Tennant, Shell International Exploration and Production Inc.</i>	
<b>SPE 114869 Optimal Value Testing—Moving from Vision to Reality</b> .....	515
<i>Hani Elshahawi, SPE, Robert H. Hite, SPE, and Melton P. Hows, SPE, Shell International E&amp;P Inc.</i>	
<b>SPE 114885 Shallow Penetration Particle-Gel System for Water and Gas Shutoff Applications</b> .....	532
<i>Julio Vasquez, Larry Eoff, and Dwyann Dalrymple, Halliburton, and Jip van Eijden, Shell International E&amp;P</i>	
<b>SPE 114888 Samarang Pipeline-Replacement Project: Application of an Innovative Approach for Shallow-Water Pipeline Installation</b> .....	538
<i>Khairil Raezwan Rashdi, PETRONAS Carigali Sdn. Bhd.; Muhamad Rashid Sainal, PETRONAS; and M Nabil M Yusoff, PETRONAS Carigali Sdn. Bhd.</i>	
<b>SPE 114911 Real Time Well Diagnostic Using Slick Line Fiber-Optic Distributed Temperature Sensors: West Venezuela Applications</b> .....	549
<i>Y.J. Gonzalez, Schlumberger; A.J. Azuaje, Petrobras; T. Duarte, R. Sapon, Perenco; M.N. Madariaga, E.A Rubio, C. Montoya, M.Y. Martinez, PDVSA; G.L Castillo Saluzzo, P. O'shaughnessy, M.A Perez Padron, A. Berbin, Schlumberger</i>	
<b>SPE 114912 Formation Powered Jet Pump Use at Kuparuk Field in Alaska</b> .....	565
<i>J.W. Peirce, SPE, J.A. Burd, G.L. Schwartz, ConocoPhillips Alaska, Inc., and T.S. Pugh, SPE, Weatherford International</i>	
<b>SPE 114913 Fluid Characterization for Miscible Floods</b> .....	577
<i>Hua Yuan, Anil Chopra, Vineet Marwah, and Fred Stalkup, SPE, PetroTel Inc.</i>	

<b>SPE 114923 Corrosion Consequences of Nitrate/Nitrite Additions to Oilfield Brines</b> .....	587
<i>Richard L. Martin, SPE, BJ Chemical Services</i>	
<b>SPE 114924 New Test Method to Qualify Production Chemicals for Subsea Injection</b> .....	595
<i>R. Alapati, SPE, L. Sanford, SPE, T. Williams, SPE, and S. Gao, SPE, Champion Technologies</i>	
<b>SPE 114928 Importance of Predicted Cementing Temperatures for Critical HP/HT Casing Design: Guidelines and Case Studies</b> .....	606
<i>Albert R. McSpadden, SPE, and Simon Glover, SPE, Altus Well Experts, Inc.</i>	
<b>SPE 114951 Rapid Country Entry Risk Screening Using Objective Relevance-Weighted Model for Transnational Petroleum Initiatives</b> .....	616
<i>Surya Rajan, SPE, Marathon Oil</i>	
<b>SPE 114963 Predicting Source Rock Quality Using GR Wireline Response and <math>U_{\text{maa}}</math> vs. <math>P_{\text{maa}}</math> Crossplots in the Lewis Shale, Green River Basin, Wyoming</b> .....	623
<i>Jenny LaGessee, SPE, Chevron; Neil Hurley, SPE, Colorado School of Mines</i>	
<b>SPE 114980 Drillstem Testing For High Pressure Deepwater Wells: A Noncemented Floating Tieback Liner Technique</b> .....	653
<i>Sameh Hussein, Baker Hughes, and Tom Scoular and Yuejin Luo, BP Plc. - BP</i>	
<b>SPE 114983 Field Applications of Capacitance-Resistive Models in Waterfloods</b> .....	661
<i>M. Sayarpour, SPE, U. of Texas-Austin; C. S. Kabir, SPE, Chevron ETC; L. W. Lake, SPE, U. of Texas-Austin</i>	
<b>SPE 115028 Utilizing 4D Microgravity To Monitor Water Encroachment</b> .....	676
<i>Mohammed J. Alshakhs, SPE, Heriot-Watt University &amp; Saudi Aramco; Erling Riis, University of Strathclyde; Robin Westerman, Heriot-Watt University; Stig Lyngra, SPE and Uthman F. Al-Otaibi, SPE, Saudi Aramco</i>	
<b>SPE 115030 Intelligent Oil Field of the Future: Will the Future Be Too Late?</b> .....	682
<i>Surya Rajan, SPE, Marathon Oil, and Jon D. Krome, SPE, Capgemini</i>	
<b>SPE 115034 Improved Production Profiling Using Thermal Balance and Statistical Modeling in the Pinedale Anticline of the US Rocky Mountains</b> .....	688
<i>G. Donovan, P.E., SPE, D. Dria, SPE, G. Ugueto, SPE, Shell E&amp;P Co., A. Gysen, Interpretative Software Products</i>	
<b>SPE 115058 Case Study: Restoring Sand-Prone Subsea Wells to Production</b> .....	698
<i>M. Vazir and L.G. Acosta, BP</i>	
<b>SPE 115081 High Impact Techniques and Technology Increase Ultimate Recovery in Tight Gas Formations</b> .....	705
<i>Jesus D. Contreras, SPE, Doug G. Durst, SPE, Travis Harris, and Don R. Watson, Baker Hughes</i>	
<b>SPE 115098 Petroleum Business Intelligence and Operational Analytics</b> .....	720
<i>David Shimbo, Senior Director Oil &amp; Gas, Oracle Corporation</i>	

## Volume 2

<b>SPE 115102 Interaction Between Intelligent Well Applications and Reservoir Management—A Comprehensive Thermal Modeling Technology for IWS Well</b> .....	726
<i>Kai Sun, Jessse Constantine, and Craig Coull, Baker Hughes</i>	
<b>SPE 115131 The Importance of Deposition Measurements in the Simulation and Design of Subsea Pipelines</b> .....	741
<i>Kamran Akbarzadeh, John Ratulowski, and Tara Davies, Schlumberger</i>	
<b>SPE 115135 A Practice of Applying Downhole Real Time Gauge Data and Control-Valve Settings to Estimate Split Flow Rate for an Intelligent Injection Well System</b> .....	757
<i>Kai Sun, Craig Coull, and Jesse Constantine, Baker Hughes</i>	

<b>SPE 115142 Injectivity Characteristics of EOR Polymers</b> .....	767
<i>R.S. Seright, SPE, New Mexico Petroleum Recovery Research Center, Mac Seheult, SPE, CP Kelco, and Todd Talashek, SPE, CP Kelco</i>	
<b>SPE 115143 An Integrated Theoretical and Experimental Study on the Effects of Multiscale Heterogeneities in Matrix Acidizing of Carbonates</b> .....	781
<i>Izgec, O., Keys, R., Zhu, D., and Hill, A. D., SPE, Texas A&amp;M University</i>	
<b>SPE 115207 Using the Formation Breakdown Pressure Measured in Pre-Frac Test to Predict Natural Fracture Swarms in Low Permeability Carbonate at the Wattenberg Field in the Denver-Julesburg Basin</b> .....	795
<i>Yuanhai Yang, Anadarko Petroleum Corporation</i>	
<b>SPE 115210 Irreducible Water Saturation Has Been Determined as the Key Factor Governing Hydrocarbon Production from Low Permeability Carbonate at the Wattenberg Field in the Denver Julesburg Basin</b> .....	801
<i>Yuanhai Yang and Thomas Birmingham, Anadarko Petroleum Corporation</i>	
<b>SPE 115214 Using Prefrac Test Information to Predict and Avoid Screenout Associated with Slickwater Frac in Tight Gas Sands at the Wattenberg Field in the Denver-Julesburg Basin</b> .....	808
<i>Yuanhai Yang, Guonong Hu, Anne Kremer, Anadarko Petroleum Corporation</i>	
<b>SPE 115246 Experimental Study on Downhole Gas-Liquid Separation and Produced Water Reinjection</b> .....	815
<i>Zunce Wang, SPE, Xiaoping Wang, Sen Li, Yan Xu, Jinglong Zhang, and Fengxia Lv Daqing Petroleum Institute</i>	
<b>SPE 115254 Chemical Intervention Technology for Low-Risk Annular Isolation in Existing Gravel Packed Wells and Uncemented Annuli</b> .....	820
<i>Jim Cole-Hamilton, SPE, and James Curtis, SPE, BJ Services Company</i>	
<b>SPE 115255 Enabling Efficient Permanent Production Monitoring of Advanced Well Completions in SaudArabia Using Fiber Optic Distributed Temperature Sensing</b> .....	833
<i>Drew Hembling, Garabed Berberian, Saudi Aramco; Neale Carter, Sensornet Ltd; and Garth Naldrett, FloQuest</i>	
<b>SPE 115258 A Practical Use of Shale Petrophysics for Stimulation Design Optimization: All Shale Plays are Not Clones of the Barnett Shale</b> .....	840
<i>Rick Rickman, Mike Mullen, Erik Petre, Bill Grieser, and Donald Kundert, SPE, Halliburton</i>	
<b>SPE 115272 The Displacement of Oil by Polymer Slugs Considering Adsorption Effects</b> .....	851
<i>Ribeiro, P. M., SPE, and Pires, A. P., SPE, North Fluminense State University</i>	
<b>SPE 115274 Impact of Pore Volume Compressibility on Recovery from Depletion Drive &amp; Miscible Gas Injection in South Oman</b> .....	866
<i>Byron Haynes, Jr., Ahmed Abdelmawla, and Simon Stromberg, Petroleum Development Oman</i>	
<b>SPE 115293 Wax Deposition in Pipelines: Flow-Loop Experiments and Investigations on a Novel Approach</b> .....	875
<i>Amine Benallal, IFP; Philippe Maurel, IFP; Jean François Agassant, Cemef; Myriam Darbouret, IFP; Guillaume Avril, IFP, and Eric Peuriere, IFP</i>	
<b>SPE 115298 Prediction of Proppant Transport from Rheological Data</b> .....	892
<i>Phillip C. Harris, Harold G. Walters, and Jason Bryant, Halliburton Energy Services</i>	
<b>SPE 115305 Multi-Scale Data Integration in Characterizing and Modeling A Deep-Water Turbidite Reservoir</b> .....	900
<i>Livio Ruvo, SPE, Eni E&amp;P; James Doyle, Eni Petroleum; Mauro Cozzi, Simone Riva, Paolo Scaglioni, and Giuseppe Serafini, Eni E&amp;P</i>	
<b>SPE 115313 Alternatives to 25% Chrome for Water-Injection Tubing in Deep Water</b> .....	916
<i>Aine Fitzgerald, SPE, Steve Groves, Stuart Gosch, SPE, Steve Morey, SPE, P. David Pattillo II, SPE, Nick Piskurich, SPE, BP, and U.B. Sathuvalli, SPE, Blade Energy Partners</i>	

<b>SPE 115315 The Effect of Elasticity on Displacement Efficiency in the Lab and Results of High Concentration Polymer Flooding in the Field</b> .....	931
<i>Haifeng Jiang, and Wenxiang Wu, SPE, Daqing Petroleum Institute; Demin Wang, SPE, Daqing Oilfield Co. Ltd; Yeming Zeng, No.1 Oil Production Company of Daqing Oilfield; Shiguang Zhao, and Jun Nie, No. 2 Oil Production Company of Daqing Oilfield</i>	
<b>SPE 115324 Model Building with Difficult Faults</b> .....	937
<i>K.S.Hoffman, SPE, J.W. Neave, and E.H. Nilsen, Roxar, Inc.</i>	
<b>SPE 115330 3D RSS for 24” Section Sets Inclination Record on the Grane Field by Introduction of an Integrated Drilling and Surveying Bottomhole Assembly</b> .....	943
<i>Erlend Saeverhagen, Cato Erichsen, and Anders Nesheim, SPE, Baker Hughes, and Glen Waldron, SPE, StatoilHydro</i>	
<b>SPE 115338 Successful Adaptation of a New-Generation Wireline Installation Capillary System for Downhole Chemical Injection on Anadarko’s Subsea Ticonderoga Field</b> .....	949
<i>John Cromb and Blake LaGrone, Anadarko Petroleum Corporation, and Jeff Bolding and Percy Lormand, BJ Services</i>	
<b>SPE 115341 Empowering Young Professionals to Lead After “The Big Crew Change”</b> .....	956
<i>Christi Gell and Laura Schilling, Halliburton</i>	
<b>SPE 115342 Effects of High Oil Viscosity on Drift Velocity for Upward Inclined Pipes</b> .....	963
<i>B. Gokcal, SPE, A. S. Al-Sarkhi, SPE, and C. Sarica, SPE, The University of Tulsa</i>	
<b>SPE 115346 Diffusion Coefficient of n-alkanes in Heavy Oil</b> .....	976
<i>U. Guerrero-Aconcha, SPE, D. Salama, Nexen Inc, SPE, and A. Kantzas, SPE, University of Calgary and TIPM Laboratory</i>	
<b>SPE 115347 Finding the Continuum Scale in Highly Heterogeneous Rocks: Example of a Large Touching Vug Carbonate</b> .....	990
<i>Narayan Nair, SPE, Steven L. Bryant, SPE, and James W. Jennings, SPE, The University of Texas at Austin</i>	
<b>SPE 115348 Existence of Flow Barriers Improves Horizontal Well Production in Bottom Water Reservoirs</b> .....	1003
<i>Peng Zhang, CNOOC; Xian-Huan Wen, SPE, Chevron; Lizhen Ge, Bo Li, Qinghong Yang, and Lichuan Lan, CNOOC; Dengen Zhou, SPE, Chevron; Xinwu Liao, and Fengli Zhang, CNOOC; and Michael S. Wei, SPE, Chevron</i>	
<b>SPE 115355 Analysis of Multiphase Production through Hilly Terrain Pipelines in Matzen Field—Austria by CFD</b> .....	1019
<i>A. Ragab, SPE, W. Brandstaetter, G. Ruthammer, SPE, Leoben University, Austria, and S. Shalaby, Suez Canal University, Egypt</i>	
<b>SPE 115361 Improved Prediction of Oil Recovery from Waterflooded Fractured Reservoirs</b> .....	1033
<i>Hamidreza Salimi, SPE, and Johannes Bruining, SPE, Delft University of Technology</i>	
<b>SPE 115365 Waterflood Surveillance in the Mars Field Deepwater GOM: Mississippi Canyon Block 807</b> .....	1049
<i>Jeff Weiland, Duane Mikulencak, Shell Offshore Inc., Phil Fox, Suparman, Gary Frisch, Mehdi Azari, Halliburton</i>	
<b>SPE 115367 Implementing i-fold Initiatives in a Deepwater Green Field, Offshore Nigeria</b> .....	1066
<i>O.S. (Tope) Adeyemi, SPE, S.G. (Steve) Shryock, SPE, Chevron, Sathish Sankaran, SPE, Halliburton, O. Hostad, StatoilHydro, and J. Gontijo, SPE, Petrobras</i>	
<b>SPE 115375 Continual Advancement of Casing-While-Drilling Technology</b> .....	1081
<i>Shanmuganathan Guna, Talisman Malaysia Ltd, Shao Wang (Keith) Won, Ming Zao Tan, Weatherford International Ltd.</i>	
<b>SPE 115378 A Simplified Method for Prediction of ECD Increase with Drillpipe Rotation</b> ....	1092
<i>Terry Hemphill and Krishna Ravi, Halliburton, Peter Bern and Juan Carlos Rojas, BP Exploration</i>	

<b>SPE 115384 Using Nanoparticle Technology to Control Formation Fines Migration</b> .....	1099
<i>Tianping (Tim) Huang, SPE, James B. Crews, SPE, and John R. Willingham, SPE, Baker Hughes</i>	
<b>SPE 115386 Recent Advances in Surfactant EOR</b> .....	1108
<i>George J. Hirasaki, SPE, Clarence A. Miller, SPE, and Maura Puerto, Rice University</i>	
<b>SPE 115395 The Use of the Industry's First 3-D Mechanical Caliper Image While Drilling Leads to Optimized Rotary-Steerable Assemblies in Push- and Point-the-Bit Configurations</b> .....	1143
<i>Junichi Sugiura, SPE and Steve Jones, SPE, PathFinder Energy Services</i>	
<b>SPE 115400 Development of Heavy Oil Fractured Carbonate Bati Raman Field: Evaluation of Steam Injection Potential and Improving Ongoing CO<sub>2</sub> Injection</b> .....	1155
<i>T. Babadagli, University of Alberta, S. Sahin, U. Kalfa, D. Celebioglu, U. Karabakal, N. N. Topguder, Turkish Petroleum Corporation (TPAO)</i>	
<b>SPE 115429 Advanced Compositional Gradient Analysis</b> .....	1177
<i>Jesús Cañas, SPE, Julian Pop, SPE, Francois Dubost, SPE, Schlumberger; Hani Elshahawi, SPE, Shell International E&amp;P</i>	
<b>SPE 115467 Integrated Fracture and Production Modeling Study in the Lower Cotton Valley Sands, Northern Louisiana</b> .....	1200
<i>E.P. Lolon and M.J. Mayerhofer, Pinnacle Technologies; I. Garcia and D.A. Durey, J-W Operating Company; and A.C. Byrd and R.D. Rhodes, EOG Resources</i>	
<b>SPE 115475 The Future of Fracturing-Fluid Technology and Rates of Hydrocarbon Recovery</b> .....	1220
<i>James B. Crews, SPE, Tianping Huang, SPE, and W. Russell Wood, SPE, Baker Hughes</i>	
<b>SPE 115476 Completion System Allows for Interventionless Stimulation Treatments in Horizontal Wells with Multiple Shale Pay Zones</b> .....	1233
<i>Greg Vargus, Matt Howell, Ron Hinkie, James Williford, and Tim Bozeman, SPE, Halliburton</i>	
<b>SPE 115481 Volatile Phosphorus Free Gellants for Hydrocarbon Based Fracturing Systems</b> .....	1241
<i>S.C. Lawrence, SPE, A.C. Kalenchuk, SPE, K. Ranicar, S. Dhillon, and A. Baig, Sanjel Corporation</i>	
<b>SPE 115482 Counter-Diffusion and Competitive Adsorption Effects During CO<sub>2</sub> Injection and Coalbed Methane Production</b> .....	1248
<i>Ebrahim Fathi, SPE, and I. Yucel Akkutlu, SPE, University of Oklahoma</i>	
<b>SPE 115483 Empirical Cost Models for TLPs and Spars</b> .....	1263
<i>C. J. Jablonowski, SPE, The University of Texas at Austin, and A. Strachan, Wood Mackenzie</i>	
<b>SPE 115485 Characterization of Oil Water Flows in Inclined Pipes</b> .....	1273
<i>S. Atmaca, Schlumberger Oilfield Services, SPE, C. Sarica, SPE, H.-Q. Zhang, SPE, and A.S. Al-Sarkhi, The University of Tulsa</i>	
<b>SPE 115499 Fluid Sampling in Carbonates-Challenges and Best Practices</b> .....	1287
<i>Ahmed Dawoud, ADCO, John Zaggas, SPE, Schlumberger, and Sammy Haddad, SPE, Schlumberger</i>	
<b>SPE 115504 Improved Techniques for Acquiring Pressure and Fluid Data in a Challenging Offshore Carbonate Environment</b> .....	1306
<i>K.D. Contreiras and F. Van-Dürinem, Sonangol P &amp; P; P. Weinheber, A. Gisolf, and M. Rueda, SPE, Schlumberger Oilfield Services</i>	
<b>SPE 115506 Dual-role of Water-Soluble Metallic Additives on Modifying In-situ Combustion Performance Using Large Activation Energy Asymptotics</b> .....	1319
<i>I.Y. Akkutlu, SPE, University of Oklahoma, and Y.C. Yortsos, SPE, University of Southern California</i>	
<b>SPE 115510 A Mixing Rule of Self-Diffusivities in Methane Hydrocarbon Mixtures and the Determination of GOR and Oil Viscosities from NMR Log Data</b> .....	1332
<i>Jiansheng Chen and Songhua Chen, Baker Hughes</i>	

<b>SPE 115511 Design, Implementation and Operation of an Advanced Collaborative Environment for Enhanced Performance in Tangguh Drilling and Completions.....</b>	1344
<i>J.G. Pickering, SPE, D. Cavanagh, SPE, S. Allen, SPE, A. Hanneman, SPE, C. Bennett, SPE, D. Ananta, N. Whiteley, BP</i>	
<b>SPE 115514 Improved Gridding Technique for Coupling Geomechanics to Reservoir Flow .....</b>	1354
<i>David Tran, Lloyd Buchanan and Long Nghiem, Computer Modelling Group Ltd.</i>	
<b>SPE 115518 Theoretical and Experimental Investigation of Water in Oil Transverse Dispersion in Porous Media .....</b>	1376
<i>Shengkai Duan, SPE, and Andrew K. Wojtanowicz, SPE, Louisiana State University</i>	
<b>SPE 115524 Plugging Wells with Hydrated Bentonite, Part 2: Bentonite Bars .....</b>	1401
<i>Brian F. Towler, SPE, University of Wyoming, Herman Victorov, Gabriel Zamfir and Pompiliu Ignat, EEM Engineering</i>	
<b>SPE 115525 Field Trial of a New Non-Damaging Degradable Fiber-Diverting Agent Achieved Full Zonal Coverage during Acid Fracturing in a Deep Gas Producer in Saudi Arabia .....</b>	1408
<i>J. Ricardo Solares, SPE, J.J. Duenas, SPE, Moataz Al-Harbi, SPE, Abdulaziz Al-Sagr, SPE, Saudi Aramco, Venkateshwaran Ramanathan, SPE, and Ryan Hellman, SPE, Schlumberger</i>	
<b>SPE 115526 Fracture Ballooning in Naturally Fractured Formations: Mechanism and Controlling Factors.....</b>	1416
<i>R. Majidi, SPE, S.Z. Miska, SPE, M. Yu, SPE, and L.G. Thompson, SPE, University of Tulsa</i>	
<b>SPE 115527 Case History: Expanding the Boundaries of a Hydraulic Workover Unit into New Economic Levels.....</b>	1425
<i>D. Attong, SPE, D. Robertson, M. Wyatt, S. Perai, SPE, S. Persad, SPE, bpTT; K. Joseph, Hydrocarbon Outsource Ltd. (H.O.L.E); J.F. Garcia, Schlumberger; C. Fleary, SPE, Superior Energy Services Trinidad</i>	
<b>SPE 115531 New Steel Tooth Cutting Structure Breaks Multiple Records in Australasia.....</b>	1437
<i>Steve Bunton, Apache, and Natalie Sim and Bobby Grimes, Baker Hughes</i>	

### Volume 3

<b>SPE 115534 Avoid Downhole Explosions, Buckled Pipe and Parted Tubing During Snubbing Operations.....</b>	1452
<i>Grant J. Duncan, SPE, Petro-Canada</i>	
<b>SPE 115535 Predictive Pore-Scale Modeling: from Three-Dimensional Images to Multiphase Flow Simulations.....</b>	1464
<i>Olumide Talabi, SPE, Saif Alsayari, SPE, Martin J Blunt, SPE, Imperial College London, UK, Hu Dong, SPE, Numerical Rocks AS, and Xiucai Zhao, SPE, China University of Petroleum</i>	
<b>SPE 115536 Oil-Based Foam and Proper Underbalanced-Drilling Practices Improve Drilling Efficiency in a Deep Gulf Coast Well.....</b>	1477
<i>J.J. Sepulveda, O.M. Falana, S. Kakadjian, J.D. Morales, F. Zamora, SPE, M.A. Dibiasio, E. Marshall, and G. Shirley, Weatherford International, and D.J. Benoit and S.A. Tkach, SPE, Chevron</i>	
<b>SPE 115537 Design of Improved High-Density, Thermally-Stable Drill-In Fluid for HTHP Applications.....</b>	1485
<i>Ryan Ezell, SPE, and Douglas J. Harrison, SPE, Halliburton</i>	
<b>SPE 115540 Overcoming Challenges during the Development and Installation of Intelligent Completion Systems in SRI Wells.....</b>	1494
<i>Paul Joseph, SPE, Walter Going, SPE, and Frank Eriksen, Baker Hughes, and Lars Vinje, SPE, and Helge Berland, StatoilHydro</i>	

<b>SPE 115545 Polymer Flood Modeling Using Streamlines—Part 1</b> .....	1502
<i>Thiele, M.R., Streamsim Technologies/Stanford University; Batycky, R.P., Streamsim Technologies; and Pöllitzer, S., and Clemens, T., OMV E&amp;P</i>	
<b>SPE 115546 Erosion Study for a 400 MMcf/D Completion: Cannonball Field, Offshore Trinidad</b> .....	1512
<i>J.C. Healy, Consultant, John Martin, BP plc, Brenton McLaury, University of Tulsa, and Raynald Jagroop, BP Trinidad and Tobago</i>	
<b>SPE 115567 Prediction Onset and Dynamic Behaviour of Liquid Loading Gas Wells</b> .....	1528
<i>S.P.C. Belfroid, SPE, W. Schiferli, SPE, and G.J.N. Alberts, SPE, TNO Science and Industry, C.A.M. Veeken, SPE, and E. Biezen, SPE, Shell-NAM</i>	
<b>SPE 115585 A Compliance-based Approach to Well Integrity Management</b> .....	1537
<i>Gary Wallace and Neil Kiddie, ConocoPhillips; John Kearns, NRG Well Examination &amp; Management Systems; and Peter Robinson, NRG Well Examination &amp; Management Systems</i>	
<b>SPE 115587 Application of Membrane Filtration Technologies to Drilling Wastes</b> .....	1543
<i>Oluwaseun, Olatubi, SPE, Burnett, David, SPE, Hann Roy, Texas A&amp;M University, and Rich Haut, HARC</i>	
<b>SPE 115591 Case History Review of the Application of Pressure Transient Testing and Production Logging in Monitoring the Performance of the Mars Deepwater Gulf of Mexico Field</b> .....	1553
<i>Jeffrey Weiland, Shell Exploration &amp; Production; Mehdi Azari, SPE, Suparman, SPE, Phil Fox, SPE, and Daniel Dorffer, SPE, Halliburton Energy Services</i>	
<b>SPE 115605 IMESA FR: A New Tool for Wellsite Explosives Safety Assessment</b> .....	1570
<i>D.J. Leidel, SPE, JRC - Halliburton</i>	
<b>SPE 115607 Maximizing Hole Enlargement While Drilling (HEWD) Performance with State-of-the-Art BHA Dynamic Analysis Program and Operation Road Map</b> .....	1578
<i>D.R. Algu, SPE, and Waitus Denham, SPE, Shell International E&amp;P, and Gail Nelson, SPE, Wei Tang, SPE, Molly T. Compton, SPE, David F. Courville, SPE, and David L. Fitzmorris, SPE, Smith International, Inc.</i>	
<b>SPE 115610 Modeling of Inversion Point for Heavy Oil-Water Emulsion Systems</b> .....	1593
<i>G. Ersoy, SPE, M. Yu, SPE, and C. Sarica, SPE, The University of Tulsa</i>	
<b>SPE 115612 The Cliff Head Field Development—Flow Assurance and Production Chemistry Challenges in a Marginal Field Context</b> .....	1604
<i>Simon Daniel, ROC Oil Company Limited, and Jon Roberts, Advantage Energy Pty Limited</i>	
<b>SPE 115614 Knowledge Management and Preparing for the Big Crew Change— A Fresh Approach</b> .....	1619
<i>David Kulakofsky, Halliburton</i>	
<b>SPE 115625 Sand on Demand: An Approach to Improving Productivity in Horizontal Wells Under Heavy Oil Primary Production</b> .....	1623
<i>Brígida Meza-Díaz, SPE, and Ronald Sawatzky, SPE, Alberta Research Council (ARC), Ergun Kuru, SPE, University of Alberta, and Kaz Oldakowski (ARC)</i>	
<b>SPE 115636 The Benefits of Safety Card Automation in Behavior-Based Safety Systems</b> ...	1641
<i>Donald Kaminski, SPE, Jake Graf, and Dan Fortune, BJ Services Co. USA, and John Touns, JW Touns Inc.</i>	
<b>SPE 115638 Advanced Cement Systems Used to Improve Geothermal Well Reliability in Java</b> .....	1648
<i>K. Ravi, M. Fukuzawa, and W.J. Hunter, SPE, Halliburton, and A. Isvan Noerdin, Star Energy</i>	
<b>SPE 115650 New Carrier Method for Propellants Offers Flexibility, Simplicity, and Performance</b> .....	1659
<i>J. Hale and C.C. Quattlebaum, SPE, Halliburton, and J. Haney, HTH Technical Services, Inc.</i>	
<b>SPE 115651 Approaches to Managing Tight-Margin Drilling in Equatorial Guinea</b> .....	1664
<i>William R. Meeks, Greg M. Browning, ExxonMobil Development Company</i>	

<b>SPE 115653 Measurement of Gel Cleanup in a Propped Fracture with Dynamic Fracture Conductivity Experiments</b> .....	1675
<i>F. Marpaung, F. Chen, P. Pongthunya, D. Zhu, and A. D. Hill, Texas A&amp;M University</i>	
<b>SPE 115655 Multi-Year Scale Inhibition from a Solid Inhibitor Applied During Stimulation</b> .....	1686
<i>D.V. Satya Gupta, SPE, J. Mike Brown, SPE, Steve Szymczak, SPE, BJ Services Company</i>	
<b>SPE 115658 Successful Pipeline Clean Out—Lessons Learned from Cleaning Paraffin Blockage from a Deepwater Pipeline</b> .....	1701
<i>Gary Poole, SPE, Gene Brock, SPE, Steve Szymczak, SPE, and Greg Casey, BJ Services Company</i>	
<b>SPE 115662 Uncertainty Assessment of SAGD Performance Using a Proxy Model Based on Butler’s Theory</b> .....	1709
<i>J. Walter Vanegas P, Clayton V. Deutsch, and Luciane B. Cunha, University of Alberta</i>	
<b>SPE 115663 Design of Carbon Dioxide Storage in Oilfields</b> .....	1730
<i>Ran Qi, Tara C. LaForce, and Martin J. Blunt, SPE, Imperial College London</i>	
<b>SPE 115665 Pseudo-Compositional Model for the Calculation of Liquid Viscosity in Oil Production Systems</b> .....	1742
<i>David F. Bergman, BP America, Robert P. Sutton, Marathon Oil Company, and José Zaghoul, BP America</i>	
<b>SPE 115672 Effect of System Pressure on Restart Conditions of Subsea Pipelines</b> .....	1754
<i>Chiedozie Ekweribe, SPE, and Faruk Civan, SPE, University of Oklahoma, Hyun Su Lee, SPE, and Probjot Singh, SPE, ConocoPhillips Company</i>	
<b>SPE 115675 Geosteering with a Combination of Extra Deep and Azimuthal Resistivity Tools</b> .....	1776
<i>W. Hal Meyer, Eric Hart, and Kaare Jensen, Baker Hughes</i>	
<b>SPE 115677 Non-Iterative Phase Behavior Model with Application to Surfactant Flooding and Limited Compositional Simulation</b> .....	1790
<i>M. Roshanfekar, SPE, and Y. Li, SPE, PetroTel, and R.T. Johns, SPE, University of Texas at Austin</i>	
<b>SPE 115678 Modeling Particle Gel Propagation in Porous Media</b> .....	1804
<i>Yu-Shu Wu, SPE, Colorado School of Mines, and Baojun Bai, SPE, Missouri University of Science and Technology</i>	
<b>SPE 115679 Experimental Investigation of Oil Recovery from Siliceous Shale by CO<sub>2</sub> Injection</b> .....	1814
<i>A.R. Kavscek, G.Q. Tang, and B. Vega, SPE, Stanford University</i>	
<b>SPE 115683 Engineering and Geologic Characterization of Giant East Texas Oil Field: North and South Pilot Studies</b> .....	1831
<i>F.P Wang, SPE, W.A. Ambrose, T.F. Hentz, F. Bonnaffé, and R.G. Loucks, Bureau of Economic Geology, John A. and Katherine G. Jackson School of Geosciences, The University of Texas at Austin</i>	
<b>SPE 115689 New Flux Surveillance Approach for High Rate Wells</b> .....	1847
<i>S. Tomic, Noble Energy Inc .; C.A. Ehlig-Economides, Texas A&amp;M University; M.J. Economides, University of Houston; and M.C. Vincent, Insight Consulting</i>	
<b>SPE 115697 Measurement of Non-Wetting Phase Trapping in Sand Packs</b> .....	1866
<i>Christopher H. Pentland, Saleh Al-Mansoori, Stefan Iglauer, Branko Bijeljic, and Martin J. Blunt, SPE, Imperial College London</i>	
<b>SPE 115698 Development and Installation of a Triple Wellhead on the Britannia Platform</b> .....	1877
<i>A. Elizabeth Matheson, SPE, and Peter Tayler, ConocoPhillips (U.K.) Limited; R. Scott Nash, SPE, Chevron North Sea Limited; and John McAuley, VetcoGra</i>	
<b>SPE 115699 Magnetic Resonance in Chalk Horizontal Well Logged with LWD</b> .....	1896
<i>Arve K. Thorsen, SPE, Tor Eiane, SPE, and Holger Thern, SPE, Baker Hughes, and Paal Fristad and Stephen Williams, SPE, StatoilHydro ASA</i>	

<b>SPE 115708 Titanium Alloy Tubing for HPHT Applications</b> .....	1912
<i>Manuel Gonzalez, Krystian Maskos, and Robert Hargrave, Chevron Energy Technology Company; John Kuberry and Doyle Reeves, Hunting International; Jim Grauman, Titanium Metals Corporation (TIMET); Jim Skogsberg, Consultant; and Syed Ali, Schlumberger</i>	
<b>SPE 115712 Current Status of Enhanced Recovery Techniques in the Fields of Russia</b> .....	1929
<i>A.N. Shandrygin, SPE, Schlumberger, and A. Lutfullin, State Commission Resources "SCR Rosnedra"</i>	
<b>SPE 115714 Actual 3D Shape of Wellbore Trajectory: An Objective Description for Complex Steered Wells</b> .....	1947
<i>Xiushan Liu, Sinopec, and Robello Samuel, Halliburton</i>	
<b>SPE 115715 Correlation Between Microseismicity and Reservoir Dynamics in a Tectonically Active Area of Colombia</b> .....	1961
<i>J.G. Osorio, SPE, G. Peñuela, SPE, and O. Otálora, BP Exploration (Colombia) Limited</i>	
<b>SPE 115717 Evaluating the Technologies To Ensure Produced Water from Trinidad Land Operations Conform To Specification Before Discharge into the Environment</b> .....	1975
<i>Nigel Sookdeo, SPE, BHP Billiton Trinidad, and Deonarine J. Jaggernauth, SPE, Petrotrin</i>	
<b>SPE 115720 The Determination of Tested Drainage Area and Reservoir Characterisation from Entire Well-Test History by Deconvolution and Conventional Pressure-Transient Analysis Techniques</b> .....	1984
<i>Kuifu Du, SPE, Shell International E&amp;P</i>	
<b>SPE 115722 Velocity Calibration for Microseismic Monitoring: Applying Smooth Layered Models with and Without Perforation Timing Measurements</b> .....	1994
<i>Donghong Pei, John A. Quirein, SPE, Bruce E. Cornish, SPE, Erkan Ay, Steve Zannoni, and Calvin Kessler, SPE, Halliburton, Will Pettitt, Applied Seismology Consultants</i>	
<b>SPE 115723 Production Improvement of Heavy-Oil Recovery by Using Electromagnetic Heating</b> .....	2000
<i>M.A. Carrizales, Larry W. Lake, and R.T. Johns, SPE, University of Texas at Austin</i>	
<b>SPE 115725 Active Management of Five-Spot Water Flood Based on Continuous Reservoir Monitoring</b> .....	2016
<i>B.L. Thigpen, SPE, S.A. Sakowski, SPE, X. Wang, SPE, X. Liu, SPE, and J. Lee, SPE, Baker Hughes</i>	
<b>SPE 115726 Gas Condensate Relative Permeabilities in Propped Fracture Porous Media: Coupling Versus Inertia</b> .....	2033
<i>M. Jamiolahmady, M. Sohrabi, and Shaun Ireland, Heriot-Watt University</i>	
<b>SPE 115732 Mechanisms of Meniscus Motion in Fractionally Wetted Porous Media</b> .....	2049
<i>Siyavash Motealleh, SPE, Mandana Ashouripashaki, SPE, David DiCarlo, SPE, and Steven Bryant, SPE, The University of Texas at Austin</i>	
<b>SPE 115735 Debottlenecking and CFD Studies of High and Low Pressure Production Separators</b> .....	2065
<i>Joseph M. Lee, Rafi qul I. Khan, and Daniel W. Phelps, NATCO</i>	
<b>SPE 115736 Anisotropic Stress Models Improve Completion Design in the Baxter Shale</b> .....	2076
<i>Shannon Higgins, Schlumberger; Scott Goodwin, Questar; and Adam Donald, Tom Bratton, and George Tracy, Schlumberger</i>	
<b>SPE 115738 Accurate Modeling of Relaxation Time and Liquid Holdup for Multiphase Flow in Production Wells</b> .....	2086
<i>Guillermo Michel, SPE, and Faruk Civan, SPE, University of Oklahoma</i>	
<b>SPE 115741 Improved Drilling and Completions Decisions Using Advanced Data Quality Profiling Techniques</b> .....	2098
<i>Paul Gregory, Intervera Data Solutions</i>	

<b>SPE 115742 Advanced Wells: How to Make a Choice between Passive and Active Inflow-Control Completions</b> .....	2104
<i>V.M. Birchenko and F.T. Al-Khelaiwi, SPE, Heriot-Watt University; M.R. Konopczynski, SPE, WellDynamics (a Halliburton Company); and D.R. Davies, SPE, Heriot-Watt University</i>	
<b>SPE 115744 Impact of Reservoir Uncertainty on Selection of Advanced Completion Type</b> .....	2119
<i>V.M. Birchenko and V.V. Demyanov, SPE, Heriot-Watt University; M.R. Konopczynski, SPE, WellDynamics (a Halliburton Company); and D.R. Davies, SPE, Heriot-Watt University</i>	
<b>SPE 115750 A New Compositional Model for Hydraulic Fracturing with Energized Fluids</b> .....	2129
<i>Kyle Frieauf and Mukul M. Sharma, SPE, The University of Texas at Austin</i>	
<b>SPE 115753 Field Application of an Interpretation Method of Downhole Temperature and Pressure Data for Detecting Water Entry in Inclined Gas Wells</b> .....	2145
<i>Ochi I. Achnivu, D. Zhu, Texas A&amp;M University, and Kenji Furui, ConocoPhillips</i>	
<b>SPE 115756 Global Challenges Facing the Health, Safety and Environmental (HS&amp;E) Function Within the Oil and Gas Industry</b> .....	2158
<i>Ray Bradish, Jonathan Bui, and Yolanda Nunez, Baker Hughes</i>	
<b>SPE 115762 CFD Simulation and Engineering Mitigation of Liquid Sloshing in Topside Process Vessel on Floating Production Platform</b> .....	2162
<i>Yaojun Lu, SPE, FMC Technologies Inc., and Shuhong Chai, Oceanic Consulting Corporation</i>	

## Volume 4

<b>SPE 115763 Predicting Hydrate Plug Formation in a Subsea Tieback</b> .....	2174
<i>Simon R. Davies, SPE, John A. Boxall, Carolyn A. Koh and E. Dendy Sloan, SPE, Colorado School of Mines; Pål V. Hemmingsen, and Keijo J. Kinnari, StatoilHydro; Zheng-Gang Xu, SPE, SPTGroup</i>	
<b>SPE 115765 Solving Swelling Clay Issues: Drilling with Expandable Reamers in WBM Reduces Trip Time by 66%, Argentina</b> .....	2184
<i>Hugo Bazzara, Hugo Biasotti, and Angel Romero, Repsol-YPF; Marcelo Crovetto, Smith Services; and Cezar Pinheiro, Smith Borehole Enlargement Group</i>	
<b>SPE 115766 Slickwater Fracturing—Food for Thought</b> .....	2195
<i>T.T. Palisch, SPE, CARBO Ceramics; M.C. Vincent, SPE, Insight Consulting; and P.J. Handren, SPE, Denbury Resources</i>	
<b>SPE 115769 The Relationship Between Fracture Complexity, Reservoir Properties, and Fracture Treatment Design</b> .....	2215
<i>C.L. Cipolla, N.R. Warpinski, M.J. Mayerhofer, and E.P. Lolon, Pinnacle Technologies, and M.C. Vincent, Carbo Ceramics</i>	
<b>SPE 115775 Using Swellable Packers to Provide Annular Isolation for Multistage Fracture Treatments</b> .....	2240
<i>Tim Davis, SPE, TAM International, and Doug McCrady, SPE, Headington Oil Company</i>	
<b>SPE 115777 Fluid Characterization: Impact on Deepwater Field Development</b> .....	2251
<i>Anupam Tagore, SPE, Mark Utgard, SPE, and Kartik Ramachandran, SPE, AMEC Paragon, and Amir Alwazzan, SPE, J Ray McDermott, Inc.</i>	
<b>SPE 115786 Improved Recovery in Gas-Condensate Reservoirs Considering Compositional Variations</b> .....	2256
<i>Chunmei Shi and Roland N. Horne, Stanford University</i>	
<b>SPE 115789 CO<sub>2</sub> Injection for Enhanced Gas Recovery and Geological Storage of CO<sub>2</sub> in the Long Coulee Glauconite F Pool, Alberta</b> .....	2271
<i>Mehran Pooladi-Darvish, Fekete Associates Inc. and University of Calgary; Huifang Hong, Sophie Theys, and Rudi Stocker, Fekete Associates Inc.; Stefan Bachu, Energy Resources Conservation Board; and Shahin Dashtgard, Simon Fraser University</i>	

<b>SPE 115790 Flow Rate Estimation from Wellhead Pressure and Temperature Data</b> .....	2282
<i>B. Izgec, SPE, Chevron ETC; A.R. Hasan, SPE, U. of Minnesota-Duluth; D. Lin, North Dakota State U.; and C.S. Kabir, SPE, Chevron ETC</i>	
<b>SPE 115791 Modeling Reservoir Temperature Transients and Matching to Permanent Downhole Gauge Data for Reservoir Parameter Estimation</b> .....	2297
<i>Obinna Duru, SPE, and Roland N. Horne, SPE, Stanford University</i>	
<b>SPE 115793 Analysis of Permanent Downhole Gauge Data by Cointerpretation of Simultaneous Pressure and Flow Rate Signals</b> .....	2313
<i>Sanghui Ahn, SPE, and Roland N. Horne, SPE, Stanford University</i>	
<b>SPE 115795 A Multiresolution Analysis of the Relationship between Spatial Distribution of Reservoir Parameters and Time Distribution of Data Measurements</b> .....	2329
<i>Abeeb A. Awotunde, SPE, and Roland N. Horne, SPE, Stanford University</i>	
<b>SPE 115796 A Semianalytical Thermal Multiphase Wellbore Flow Model for Use in Reservoir Simulation</b> .....	2345
<i>S. Livescu, L.J. Durlafsky, and K. Aziz, Stanford University</i>	
<b>SPE 115816 Monitoring Inflow Distribution in Multi-zone, Velocity String Gas Wells Using Slickline Deployed Fiber Optic Distributed Temperature Measurements</b> .....	2361
<i>H. Huebsch, M. Moss, and T. Trilsbeck, EnCana, and G. Brown, S. Rogers, and T. Bouchard, Schlumberger</i>	
<b>SPE 115820 Method and Application of Cyclic Well Testing with Production Logging</b> .....	2376
<i>J. Rochon, SPE, V. Jaffrezic, SPE, and J.L. Boutaud de La Combe, SPE, TOTAL Exploration &amp; Production; M. Azari, SPE, S. Roy, SPE, and D. Dorffer, SPE, Halliburton Energy Services; and A. Webb and J. Singer, SPE, GE Energy Oilfield Technology</i>	
<b>SPE 115822 Using the Continuous NMR Fluid Properties Scan to Optimize Sampling with Wireline Formation Testers</b> .....	2391
<i>Chanh Cao Minh, Peter Weinheber, Wich Wichers, and Adriaan Gisolf, Schlumberger; Emmanuel Caroli, Francois Jaffuel, and Yannick Poirier, Total; Davide Baldini, Marisa Sitta, and Loris Tealdi, ENI</i>	
<b>SPE 115825 Best Practices for Formation Testing in Low Permeability Reservoirs</b> .....	2405
<i>Peter Weinheber and Edward Boratko, Schlumberger; Kilamba Diogo Contreiras and Francisco Van-Dunem, Sonangol P&amp;P; Robert Spaeth, Marathon; EB Dussan V, Marco Rueda, and Adriaan Gisolf, Schlumberger Oilfield Services</i>	
<b>SPE 115836 Frequentist Meets Spatialist: A Marriage Made in Reservoir Characterization and Modeling</b> .....	2425
<i>Y. Z. Ma, SPE, Schlumberger; A. Seto, SPE, Pengrowth Corp.; and E. Gomez, Schlumberger</i>	
<b>SPE 115849 Pushing the Limit: High-Rate Artificial-Lift Evaluation for a Sour, Heavy-Oil, Thermal EOR Project in Oman</b> .....	2437
<i>G. H. Lanier, SPE, Petroleum Development Oman LLC, and M. Mahoney, SPE, Lufkin &amp; Partners LLC</i>	
<b>SPE 115857 Risk Analysis as Decision Tool to Upgrade Aging Offshore Trunk Lines</b> .....	2453
<i>L. Angibeaud, SPE, Saudi Aramco</i>	
<b>SPE 115860 High Gas Rate Production: Expandable Solutions in the Mediterranean Sea</b> .....	2463
<i>Stefano Pierfelici, Antonella Tacconelli, Giuseppe Ripa, and Hesham Mahmoud El Nagar, Belayim Petroleum Company, and Eddie G. Bowen, SPE, Tamer Elsakhawy, Omar Y. Mohamed, SPE, Baker Hughes</i>	
<b>SPE 115881 Multiple Reservoir Simulations Integration: An Alternative to Full Field Simulation in the North Kuwait Jurassic Complex</b> .....	2472
<i>Kassem Ghorayeb, SPE, Manoch Limsukhon, SPE, Schlumberger, Qasem Dashti, SPE, Rafi Mohammad Aziz, SPE, Kuwait Oil Company</i>	

<b>SPE 115888 Synthetic and Field Examples of the Estimation of Capillary Pressure and Relative Permeability from Formation-Tester Measurements</b> .....	2481
<i>Renzo Angeles, SPE, Abdolhamid Hadibeik, SPE, Carlos Torres-Verdin, SPE, and Kamy Sepehrnoori, SPE, The University of Texas at Austin</i>	
<b>SPE 115892 Innovative Frac Stimulation of Low Perm Oil Zone in High Deviation Well Offshore Congo</b> .....	2497
<i>Fabien Lemesnager, Patrick M' Bouyou, and Jean Gavalda, Total, and B.W. McDaniel, Philippe Quero, Jean-Michel Ranjeva, Alexandre Cortier, and Michael Hurey, Halliburton</i>	
<b>SPE 115900 Investigation of VOC Emission Control by the Use of Clay-Aqueous Foam</b> .....	2514
<i>Sani, A.M., SPE, and Mohanty, K.K., SPE, University of Houston</i>	
<b>SPE 115907 Characterization and Modeling Study of the Carbonate-Fractured Reservoir in the Cantarell Field, Mexico</b> .....	2520
<i>Feng Shen, GeoReservoir Research; Antonio Pino Villavicencio, Jesus Hernandez Garcia, Arturo Vazquez Bustos, and JoseLuis Rodriguez Avendano, Pemex</i>	
<b>SPE 115911 A Multistage MCMC Method with Nonparametric Error Model for Efficient Uncertainty Quantification in History Matching</b> .....	2532
<i>Xianlin Ma, Akhil Datta-Gupta, Yalchin Efendiev, Texas A&amp;M University</i>	
<b>SPE 115915 Integrated Geomechanical Study for Hole Stability, Sanding Potential and Completion Selection: A Case Study from South East Asia</b> .....	2551
<i>Abbas Khaksar, SPE, and Khalil Rahman, SPE, Helix RDS, Juanih Ghani, SPE, and Hapiztuddin Mangor, Talisman Malaysia</i>	
<b>SPE 115917 Public Perception of the Natural Gas Industry: Insights from Two Barnett Shale Counties</b> .....	2568
<i>G.L. Theodori, Sam Houston State University</i>	
<b>SPE 115918 A New Approach to IPR Curves of Horizontal Wells in Two-Phase Reservoirs</b> .....	2573
<i>Hadi Jabbari, Iranian Offshore Oil Company and Michael J. Economides, University of Houston</i>	
<b>SPE 115920 Ocean Sustainability and Stakeholders: The Future of Oil and Gas Industry Operations in the Marine Environment</b> .....	2589
<i>P.F. Holthus, World Ocean Council</i>	
<b>SPE 115926 Development and Field Application of a New, Highly Stable Emulsified Acid</b> .....	2594
<i>Hisham A. Nasr-El-Din, SPE, Texas A&amp;M University; Saad Al-Dirweesh, SPE, Saudi Aramco; and Mathew Samuel, SPE, Schlumberger</i>	
<b>SPE 115929 Modeling Leakage Through Faults of CO<sub>2</sub> Stored in an Aquifer</b> .....	2605
<i>Kyung Won Chang, The University of Texas at Austin; Susan E. Minkoff, The University of Maryland, Baltimore County; and Steven L. Bryant, SPE, The University of Texas at Austin</i>	
<b>SPE 115933 Critical Review of Existing Solutions to Predict and Model Liquid Loading in Gas Wells</b> .....	2628
<i>F. A. Solomon, SPE, G. Falcone, SPE, and C. Teodoriu, SPE, Texas A&amp;M University</i>	
<b>SPE 115934 Development of a New Plunger-Lift Model Using Smart Plunger Data</b> .....	2639
<i>G.K. Chava, SPE, G. Falcone, SPE, and C. Teodoriu, SPE, Texas A&amp;M University</i>	
<b>SPE 115938 Investigation of Swirl Flows Applied to the Oil and Gas Industry</b> .....	2654
<i>Meher Surendra, Gioia Falcone, and Catalin Teodoriu, SPE, Texas A&amp;M University</i>	
<b>SPE 115940 Screening Strategy for Chemical Enhanced Oil Recovery in Wyoming Basins</b> .....	2662
<i>V. Alvarado, Department of Chemical and Petroleum Engineering, University of Wyoming, and G. Thyne and G.R. Murrell, Enhanced Oil Recovery Institute, University of Wyoming</i>	
<b>SPE 115941 Effect of Salinity and pH on Pickering Emulsion Stability</b> .....	2676
<i>X. Wang, SPE, and V. Alvarado, SPE, University of Wyoming</i>	

<b>SPE 115946 Numerical Modeling of Pressure and Temperature Profiles Including Phase Transitions in Carbon Dioxide Wells</b> .....	2693
<i>Lincoln Paterson, SPE, CO2CRC, CSIRO; Meng Lu, SPE, CSIRO; Luke D. Connell, SPE, CSIRO; and Jonathan Ennis-King, SPE, CO2CRC, CSIRO</i>	
<b>SPE 115947 Extreme Production Logging in Long Horizontal Wells with High Flow Rates using Downhole Tractors</b> .....	2704
<i>H.C. Castillo, SPE, D.R. Turner, SPE, Baker Hughes; and E.A. Smalley, SPE, NOV CTES</i>	
<b>SPE 115950 Artificial Lift Selection Strategy for the Life of a Gas Well with Some Liquid Production</b> .....	2725
<i>Peter O. Oyewole, SPE, BP, and James F. Lea, SPE, PL Tech LLC</i>	
<b>SPE 115961 Effect of Diffusion on Dispersion</b> .....	2739
<i>Raman K. Jha, Steven L. Bryant, SPE, and Larry W. Lake, SPE, The University of Texas at Austin</i>	
<b>SPE 115963 Multiphase Loop Tests for Subsea Separation-Unit Development</b> .....	2755
<i>P. Pagnier, C. Noïk, and P. Maurel, IFP, and A. Ricordeau and J.L. Volle, Total</i>	
<b>SPE 115964 Rewarding and Reducing Risk: Harnessing the Potential of Entrepreneurs in the Oil &amp; Gas Industry</b> .....	2763
<i>Robert Preston, SPE, and Nigel Leggett, SPE, Epi-V LLP</i>	
<b>SPE 115970 Fluid-Phase Behaviour for a Miscible-Gas-Injection EOR Project in a Giant Offshore Oil Field with Large Compositional Variations</b> .....	2773
<i>N. Lindeloff, SPE, K. Mogensen, SPE, P. van Lingen, SPE, S.H. Do, SPE, and S. Frank, SPE, Maersk Oil, and R. Noman, SPE, Qatar Petroleum</i>	
<b>SPE 115974 Broadening the Application Range of Water Shutoff/Conformance Control Microgels: An Investigation of their Chemical Robustness</b> .....	2794
<i>Céline Cozic, David Rousseau, and René Tabary, IFP</i>	
<b>SPE 115976 Observations from a Fieldwide Pressure Data Acquisition Campaign in the Wara Formation of the Greater Burgan Field, Kuwait</b> .....	2812
<i>Anil Ambastha, SPE, Chevron; Qasem Dashti, SPE, Kuwait Oil Company; Pierre-David Maizeret, SPE; Farhan Al-Farhan, SPE, Schlumberger; Sami Bou-Mikael, SPE, Chevron; and Sasi Rajan, SPE, Kuwait Oil Company</i>	
<b>SPE 115983 Compressible Streamline-Based Simulation with Changes in Oil Composition</b> .....	2833
<i>V. T. Beraldo, Petrobras; M. J. Blunt, Imperial College; D. J. Schiozer, State University of Campinas</i>	
<b>SPE 115987 An Analysis of Noise Characteristics of Drill Bits</b> .....	2844
<i>Christian Gradl, SPE, BP; Alfred W. Eustes, SPE, Colorado School of Mines; and Gerhard Thonhauser, SPE, University of Leoben</i>	
<b>SPE 116003 Improving Reservoir Characterization Using Accurate Flow-Rate History</b> .....	2859
<i>E.J. Pinilla, SPE, C.H. Pardo, SPE, L.M. Warlick, SPE, and Y.M. Al-Shobaili, SPE, Saudi Aramco, and M.N. Aftab, A. Khan, and N.M.A. Rahman, SPE, Schlumberger</i>	
<b>SPE 116007 Development and Use of High Density Fracturing Fluid in Deep Water Gulf of Mexico Frac and Packs</b> .....	2872
<i>L. Rivas, G. Navaira, and B. Bourgeois, SPE, Chevron, B. Waltman, P. Lord and T. Goosen, SPE, Halliburton</i>	
<b>SPE 116008 Relative Permeabilities for Blowdown of a Near-Critical Oil Reservoir: Issues and Solutions Emerging from Pore-Scale Network Modelling</b> .....	2881
<i>I. Bondino, SPE, Total E&amp;P UK Ltd; C.C. Ezeuko and S.R. McDougall, Heriot-Watt University; R. Ward, Total E&amp;P UK Ltd; G. Hamon, TOTAL S.A.</i>	
<b>Volume 5</b>	
<b>SPE 116013 Study of the PVT Properties of Gas—Synthetic Drilling Fluid Mixtures Applied to Well Control</b> .....	2893
<i>E.N. Monteiro and P.R. Ribeiro, Unicamp, and R.F.T. Lomba, Petrobras</i>	

<b>SPE 116015 The Methods for Determining the Viability of Electronic Textbooks and Their Hardware for Use in the University Environment: The Trips, Tricks, and Traps for Their Selection</b> .....	2908
<i>Platt, F.M., SPE, Texas A&amp;M University; Hausman, L. A., Texas A&amp;M University at Qatar</i>	
<b>SPE 116020 Glass Reinforced Epoxy Casing: Lessons Learned After Cementing and Completion of 70 Wells</b> .....	2919
<i>G. Romera, J. Robles, SPE, H. Peacock, and W. Morris, SPE, San Antonio Internacional, and D. Peralta, Petrobras Energía S.A.</i>	
<b>SPE 116026 Valuing Oil and Gas Options by Least-Squares Monte Carlo Simulation</b> .....	2928
<i>B.J.A. Willigers, Palantir Economic Solutions Ltd., and R.B. Bratvold, University of Stavanger and IRIS</i>	
<b>SPE 116029 Drill Pipe Stress and Cumulative Fatigue Analysis in Complex Wells Drilling: New Approach in Fatigue Optimization</b> .....	2940
<i>A. Sikal, DrillScan; J. Boulet, VAM Drilling; and S. Menand and H. Sellami, Ecole des Mines de Paris</i>	
<b>SPE 116038 Thermally-Enhanced Evaporation Process in Fractured Reservoirs—A Pore-Network Study</b> .....	2957
<i>Ehsan S. Tajer and Yannis C. Yortsos, University of Southern California</i>	
<b>SPE 116054 Using Industry Standards as a Way to Predict Sand Performance and Approve Sand Deposits: Is There a Catch 22?</b> .....	2968
<i>H.D. Brannon, SPE, and C.J. Stephenson, SPE, BJ Services Company, and E.R. Freeman, SPE, D.A. Anschutz, SPE, J.J. Renkes, SPE, and A.R. Rickards, SPE, PropTester Inc.</i>	
<b>SPE 116057 The Impact of Effective Fracture Area and Conductivity on Fracture Deliverability and Stimulation Value</b> .....	2975
<i>Harold D. Brannon and Thomas R Starks II, BJ Services Company</i>	
<b>SPE 116066 Study of New Solutions for Acid-Resistant Cements</b> .....	2991
<i>E. Lécolier, A. Rivereau, N. Ferrer, A. Audibert, and X. Longaygue, IFP</i>	
<b>SPE 116068 Determination of In-Situ Two-Phase Flow Properties Through Downhole Fluid Movement Monitoring</b> .....	3002
<i>Fikri Kuchuk, SPE, and Lang Zhan, SPE, Schlumberger; S. Mark Ma, SPE, and Ali M. Al-Shahri, SPE, Saudi Aramco; and T.S. Ramakrishnan, SPE, Bilgin Altundas, SPE, Murat Zeybek, SPE, Romain de Loubens, SPE, and Nikita Chugunov, SPE, Schlumberger</i>	
<b>SPE 116071 Maximizing Reservoir Contact in the Oseberg Field Using a New Azimuthal Deep-Reading Technology</b> .....	3025
<i>M. Bittar, SPE, F. Hveding, N. Clegg, J. Johnston, and P. Solberg, Halliburton Energy Services, and Gro Mangeroy, StatoilHydro</i>	
<b>SPE 116075 Survivability of Optical Fiber for Harsh Environments</b> .....	3031
<i>R.T. Ramos and W.D. Hawthorne, Schlumberger</i>	
<b>SPE 116077 “Will My Partners Slow Me Down?” The Effect of Partner Ownership and Experience on Deepwater Project Execution Time</b> .....	3041
<i>Arun K. Sharma, Maersk Oil America Inc.</i>	
<b>SPE 116087 Reconciling Production and Well-Test Data in Mapping kh Trends: Field Study</b> .....	3058
<i>Mars Khasanov, Vitaly Krasnov, and Alexander Petrov, Rosneft, Mohan Kelkar, The University of Tulsa, and Asnul Bahar, Kelkar and Associates, Inc.</i>	
<b>SPE 116091 Screen Development to Withstand 4,000-psi Overbalance, Subhydrostatic Completion in Deepwater GOM Subsea Waterflood Injector Wells</b> .....	3069
<i>George Gillespie, SPE, Weatherford International; Chuck Hinnant, SPE, Chris Davis, SPE, and Jamie Schober, SPE, Shell; and Mike Darring, SPE, M-I SWACO</i>	
<b>SPE 116092 Stress Reorientation Around Horizontal Wells</b> .....	3087
<i>Vasudev Singh, SPE, Nicolas P. Roussel, SPE, and Mukul M. Sharma, SPE, University of Texas at Austin</i>	

<b>SPE 116094 Collapse and Burst Test Methods for Sand Screens</b> .....	3098
<i>George Gillespie, SPE, Weatherford International</i>	
<b>SPE 116098 Enhanced Characterization of Multi-Phase Downhole Fluid Samples Using a Full Spectrum Weighted Regression Analysis</b> .....	3113
<i>R.J. Butsch, SPE, C.W. Morris, SPE, and K.T. Pinto, SPE, Schlumberger</i>	
<b>SPE 116105 Unlocking Tight Oil: Selective Multi-Stage Fracturing in the Bakken Shale</b> .....	3130
<i>Brent Miller and John Paneitz, Whiting Petroleum Corporation, and Sean Yakely and Kent Evans, Baker Hughes</i>	
<b>SPE 116110 Investigating Matrix-Fracture Transfer via a Level Set Method for Drainage and Imbibition</b> .....	3136
<i>Maša Prodanović, SPE, Steven L. Bryant, SPE, The University of Texas at Austin, and Zuleima T. Karpyn, SPE, The Pennsylvania State University</i>	
<b>SPE 116113 Analytical Upgridding Method to Preserve Dynamic Flow Behavior</b> .....	3153
<i>Seyyed Abolfazl Hosseini, SPE, and Mohan Kelkar, SPE, The University of Tulsa</i>	
<b>SPE 116118 Significant Cost Savings Achieved Through the Use of PDC Bits in Compressed Air/Foam Applications</b> .....	3167
<i>Bryan George, Sandridge Energy, Inc.; Eric Grayson, Artex Oil Co.; and Roger E. Lays, Floyd Felderhoff, Mike Doster, and Matt Holmes, Baker Hughes</i>	
<b>SPE 116119 Development of Gas/Oil Miscibility in Water and Gas Injection</b> .....	3182
<i>Tara LaForce, Imperial College London, and Franklin M. Orr, Jr., Stanford University</i>	
<b>SPE 116123 Determination of Structural Dip and Azimuth from LWD Azimuthal Propagation Resistivity Measurements in Anisotropic Formations</b> .....	3190
<i>S. Fang, SPE, A. Merchant, SPE, E. Hart, SPE, and A. Kirkwood, SPE, Baker Hughes</i>	
<b>SPE 116124 Case History of Sequential and Simultaneous Fracturing of the Barnett Shale in Parker County</b> .....	3203
<i>P.N. Mutalik and Bob Gibson, Williams Companies, Tulsa</i>	
<b>SPE 116127 Sectional Student Development Committee: New Ideas on Bridging the Student to Active Membership Gap</b> .....	3210
<i>A. Anchliya and D.J. Weatherford, Texas A&amp;M University, and R. Pongratz, Halliburton</i>	
<b>SPE 116129 Pore Pressure Coefficient Anisotropy Measurements for Intrinsic and Induced Anisotropy in Sandstone</b> .....	3217
<i>Ashraf Al-Tahini, SPE, Saudi Aramco Oil Company, and Younane Abousleiman, SPE, PoroMechanics Institute, University of Oklahoma</i>	
<b>SPE 116130 Dielectric Dispersion: A New Wireline Petrophysical Measurement</b> .....	3230
<i>Mehdi Hizem, Henri Budan, Benoit Devillé, Ollivier Faivre, Laurent Mossé, and Matthieu Simon, Schlumberger</i>	
<b>SPE 116132 Acoustic Measurement and Calibration of In Situ Stress Anisotropy Around a Wellbore</b> .....	3251
<i>Ashraf Al-Tahini, SPE, Saudi Aramco Oil Company, and Younane Abousleiman, SPE, PoroMechanics Institute, University of Oklahoma</i>	
<b>SPE 116133 Managing Operational Challenges in the Installation of an Intelligent Well Completion in a Deepwater Environment</b> .....	3267
<i>Arashi Ajayi, SPE, WellDynamics (a Halliburton Company); Shawn Pace, SPE, and Bryan Petrich, Chevron; and Adeyemi Adejuwon, SPE, Cardinal Agbonaye, SPE, and Courage Erumwunse, SPE, WellDynamics (a Halliburton Company)</i>	
<b>SPE 116135 The Minimum Required Gas-Injection Rate for Liquid Removal in Air/Gas Drilling</b> .....	3273
<i>M. Tabatabaei, SPE, A. Ghalambor, SPE, and B. Guo, SPE, University of Louisiana at Lafayette</i>	
<b>SPE 116136 Semianalytical Representation of Wells and Near-Well Flow Convergence in Numerical Reservoir Simulation</b> .....	3282
<i>B. Kurtoglu, SPE, Colorado School of Mines; F. Medeiros, Jr., SPE, Petrobras; and E. Ozkan, SPE, and H. Kazemi, SPE, Colorado School of Mines</i>	

<b>SPE 116138 Multilaterals Drilling and Sustainable Openhole Production from Theory to Field Case Studies</b> .....	3302
<i>Son K. Hoang and Younane N. Abousleiman, Poromechanics Institute, The University of Oklahoma, and Ashraf Al-Tahini, Saudi Aramco</i>	
<b>SPE 116139 Wellbore Stability Performance of Water Base Mud Additives</b> .....	3325
<i>Russell T. Ewy and E. Keith Morton, Chevron Energy Technology Company</i>	
<b>SPE 116144 Interpretation of Interwell Connectivity Tests in a Waterflood System</b> .....	3334
<i>A. V. Dinh and D. Tiab, SPE, University of Oklahoma</i>	
<b>SPE 116145 Numerical Simulation and Sensitivity Analysis of In-Situ Fluid Flow in MRI Laboratory Waterfloods of Fractured Carbonate Rocks at Different Wettabilities</b> .....	3352
<i>Asmund Haugen, Martin A. Fernø, and Arne Graue, University of Bergen, Norway</i>	
<b>SPE 116146 Multi-Frequency LWD Acoustic Tool for Shear Slowness Measurement</b> .....	3361
<i>J. Luis, Andonof, and Derek Buster, Tor Eiane, and Kiattisak Petpisit, SPE, Baker Hughes</i>	
<b>SPE 116148 Remediation of Hydrate Plugs in Offshore Wells via Capillary Tubing— A Cost Effective Alternative</b> .....	3371
<i>Tony Gounah, SPE, and Kevin D. Renfro, SPE, Anadarko Petroleum Corporation, and Jeff Bolding, SPE, and Mark Embrey, SPE, BJ Services</i>	
<b>SPE 116149 Successful Field Application in Continuous DTS Monitoring Under Harsh Environment of SAGD Wells Using New Optical-Fiber Technology: Case Study from Canada</b> .....	3378
<i>Jiten Kaura and Jose Sierra, WellDynamics (a Halliburton Company)</i>	
<b>SPE 116155 A New Look at Wellbore Collision Probability</b> .....	3389
<i>Andrew G. Brooks, Baker Hughes</i>	
<b>SPE 116157 Dehy 20 Water Filtration Plant—A Closed Loop Water Treating Facility</b> .....	3397
<i>E.L. Grishaber, SPE, Aera Energy LLC</i>	
<b>SPE 116162 PVT Data Quality: Round Robin Results</b> .....	3409
<i>A.G. Stephen, SPE, D. Bergman, SPE, and T. Dodd, SPE, BP, and W. Kriel, SGS</i>	
<b>SPE 116168 Numerical Modeling of the Slit Mode of Cavity Evolution Associated with Sand Production</b> .....	3422
<i>C. Detournay, Itasca Consulting Group, Inc.</i>	
<b>SPE 116169 Friction-Based Thermal Desorption Technology: Kashagan Development Project Meets Environmental Compliance in Drill-Cuttings Treatment and Disposal</b> .....	3432
<i>A.J. Murray, SPE, and M. Kapila, SPE, M-I Swaco; G. Ferrari and D. Degouy, Agip; B.J. Espagne, Total; and P. Handgraaf, Thermtech</i>	
<b>SPE 116173 Testing of New PDC Cutter Edge Geometry Doubles Penetration Rate and Reduces Torque</b> .....	3438
<i>Steve Barton, Deepthi Setlur, and John Clegg, ReedHycalog</i>	
<b>SPE 116175 Sampling and Characterization of Rock and Fluids for Heavy Oil Reservoir Management</b> .....	3450
<i>C.K. Smith, SPE, and F.H. Wang, SPE, ExxonMobil Upstream Research Company</i>	
<b>SPE 116182 DTS Monitoring Data of Hydraulic Fracturing: Experiences and Lessons Learned</b> .....	3461
<i>Jose Sierra and Jiten Kaura, WellDynamics (a Halliburton Company); Dan Gualtieri, Gerard Glasbergen, and Diptabhas Sarkar, Halliburton; and David Johnson, Digital Ascension</i>	
<b>SPE 116191 Development and Field Application of a Low pH, Efficient Fracturing Fluid for Tight Gas Fields in the Greater Green River Basin, Wyoming</b> .....	3476
<i>D.V.S. Gupta, SPE, BJ Services Company; T.L. Jackson, SPE, G.J. Hlavinka, SPE, and J.B. Evans, SPE, Cabot Oil &amp; Gas Corporation ; and H.V. Le, SPE, A. Batrashkin, SPE, and M.T. Shaefer, SPE, BJ Services Company</i>	

<b>SPE 116196 Use of Multiple-Response Optimization to Assist Reservoir Simulation Probabilistic Forecasting and History Matching</b> .....	3489
<i>W. Terry Osterloh, Chevron Energy Technology Company</i>	
<b>SPE 116209 Pilot Scale Test of a Produced Water-Treatment System for Initial Removal of Organic Compounds</b> .....	3499
<i>Soondong Kwon, UT-Austin Civil Engineering; E.J. Sullivan, Los Alamos National Laboratory; Lynn Katz and Kerry Kinney, UT-Austin Civil Engineering; and Rob Bowman, New Mexico Tech</i>	
<b>SPE 116210 Corroded Casing: Testing of Sealing Capability and Retrievalability of a Swellable Elastomer Packer</b> .....	3516
<i>Emmanuel Pradie, SPE, Total E&amp;P Qatar; M. Rusdan Jaafar, Qatar Petroleum; and Chris Barnes, SPE, Geir Gjelstad, and Peter E. Smith, SPE, Halliburton</i>	
<b>SPE 116212 A Structured Approach for Probabilistic-Assisted History Matching Using Evolutionary Algorithms: Tengiz Field Applications</b> .....	3532
<i>H. Cheng, SPE, and K. Dehghani, SPE, Chevron Energy Technology Company, and T. Billiter, Tengizchevroil Kazakhstan</i>	
<b>SPE 116214 Effect of Brine on Hydrate Anti-Agglomeration</b> .....	3550
<i>J.D. York, SPE, Yale University, Chemical Engineering; and A. Firoozabadi, SPE, Yale University, Chemical Engineering, and Reservoir Engineering Research Institute</i>	
<b>SPE 116218 The Integrated Approach to Formation Water Management: from Reservoir Management to Protection of the Environment</b> .....	3568
<i>Jose G. Flores, SPE, and Jon Elphick, SPE, Schlumberger, and Francisco Lopez and Pablo Espinel, AGIP Oil Ecuador, an ENI subsidiary</i>	
<b>SPE 116221 Extended-Stroke Downhole Power Unit Successfully Pulls Subsea Wellhead Plugs in the Gulf of Mexico</b> .....	3581
<i>Dennis McDaniel, SPE, and John Cromb, SPE, Anadarko Petroleum Corporation; Jim Walton, HTK Consultants, Inc.; and Jack Clemens, Darrell Moore, and Jeff Huggins, Halliburton</i>	
<b>SPE 116222 What Does Sustainability Mean to Petroleum?</b> .....	3589
<i>Ben W. Ebenhack, AHEAD Energy Corporation and University of Rochester, and Daniel M. Martinez, AHEAD Energy Corporation and University of Southern Maine</i>	
<b>SPE 116223 Directional Success in the Canadian Rockies: Dynamic Tools Enable Accurate Comparison of Drill Bit Designs</b> .....	3604
<i>Steve Barton and Russ Lockley, ReedHycalo</i>	
<b>SPE 116226 Next-Generation Perforating System Enhances the Testing and Treatment of Fracture Stimulated Wells in Canada</b> .....	3614
<i>M.R.G. Bell, SPE, GEODynamics Inc., and D.A. Cuthill, SPE, Weatherford Canada Partnership</i>	

## Volume 6

<b>SPE 116232 Utilizing Modern Frac Baffles Improves Completion Efficiencies</b> .....	3624
<i>Michael Arispe, SPE, and Randy Mueller, SPE, Anadarko Petroleum; Chris Meaux, SPE, and Todd Green, SPE, BJ Services; and Daniel Rojas, SPE, Packers Plus</i>	
<b>SPE 116239 Well Test Analysis in Volatile Oil Reservoirs</b> .....	3637
<i>Sanni, M., SPE, and Gringarten, A.C., SPE, Imperial College London</i>	
<b>SPE 116243 Numerical Investigation of Gravitational Compositional Grading in Hydrocarbon Reservoirs Using Centrifuge Data</b> .....	3656
<i>P.D. Ting, SPE, and B. Dindoruk, SPE, Shell International E&amp;P Inc., and J. Ratulowski, SPE, Schlumberger</i>	
<b>SPE 116245 Evolution of Single-Trip Multiple-Zone Completion Technology: How State-of-the-Art New Developments Can Meet Today's Ultra Deepwater Needs</b> .....	3669
<i>Brad Clarkson, Tommy Grigsby, Colby Ross, Emile Sevadjian, and Bruce Techentien, Halliburton</i>	

<b>SPE 116254 Employing Flow Assurance in an Offshore FEED Study .....</b>	<b>3686</b>
<i>Gary Grove and Geir Saether, Knowledge Reservoir, LLC, and Giovanni P. Estrada, EDG Consulting Engineers</i>	
<b>SPE 116255 Numerical Inversion of Laplace Transforms in the Solution of Transient Flow Problems with Discontinuities .....</b>	<b>3696</b>
<i>N. Al-Ajmi, SPE, Colorado School of Mines; M. Ahmadi, SPE, Norwest Questa Engineering; and E. Ozkan, SPE, and H. Kazemi, SPE, Colorado School of Mines</i>	
<b>SPE 116256 Numerical Inversion of Laplace Transforms in the Solution of Transient Flow Problems with Discontinuities .....</b>	<b>3711</b>
<i>N. Al-Ajmi, SPE, Colorado School of Mines; M. Ahmadi, SPE, Norwest Questa Engineering; and E. Ozkan, SPE, and H. Kazemi, SPE, Colorado School of Mines</i>	
<b>SPE 116261 Development of an Expandable Liner Hanger with Increased Annular Flow Area .....</b>	<b>3722</b>
<i>Tance Jackson and Brock Watson, Halliburton, and Larry Moran, Conoco Phillips Company</i>	
<b>SPE 116263 Completion of a Horizontal Well with Swellable Packers To Control Water Production .....</b>	<b>3730</b>
<i>Katrina Cooper, SPE, Adrienne McVey, Daniel Schafer, SPE, and J.D. Cox, BP; Nathan Hilleary, SPE, Schlumberger; Donald Parker, SPE, Petroleum Equipment &amp; Services, Inc., and John Crooks, SPE, TAM Intl.</i>	
<b>SPE 116266 Acquiring Microresistivity Borehole Images in Deviated and Horizontal Wells Using Shuttle-Deployed Memory Tools .....</b>	<b>3735</b>
<i>R. Christie, SPE, and P.A.S. Elkington, SPE, Weatherford International Ltd., and I. McIlreath and T. Natras, EnCana Corporation</i>	
<b>SPE 116267 Dual Laser Scheme Revolutionizes DTS Deployments .....</b>	<b>3746</b>
<i>Mikko Jaaskelainen, SPE, Kwang Suh, and Chung Lee, SensorTran Inc.</i>	
<b>SPE 116270 Determining Multilayer Formation Properties from Transient Temperature and Pressure Measurements .....</b>	<b>3751</b>
<i>W. Sui, D. Zhu, A.D. Hill, and C.A. Ehlig-Economides, Texas A&amp;M University</i>	
<b>SPE 116274 Successful Relief Well Drilling Utilizing Gyroscopic MWD (GMWD) for Re-Entry into an Existing Cased Hole .....</b>	<b>3765</b>
<i>Juergen Maehs, Baker Hughes; Doug MacAfee, Apache Corporation; and Steve Renne, Greg Cellos, and Ananth Srinivasan, Baker Hughes</i>	
<b>SPE 116280 The Use of Composite Materials in Repairing and Reinforcing Pipelines, Piping, and Structures .....</b>	<b>3771</b>
<i>Adam Rowe, Chris Alexander, Stress Engineering Services, Inc.</i>	
<b>SPE 116286 Detecting Thief Zones in Carbonate Reservoirs by Integrating Borehole Images with Dynamic Measurements .....</b>	<b>3794</b>
<i>Bingjian Li, Schlumberger; Hamad Najeh, Kuwait Oil Company; Jim Lantz, BP Kuwait Ltd.; and Mansoor Ali Rampurawala, Ihsan Gok, and Mohammed Al-Khabbaz, Schlumberger</i>	
<b>SPE 116294 Nuclear Energy for Unconventional Fossil-Fuel Resource Recovery .....</b>	<b>3806</b>
<i>A. Badruzzaman, SPE, J. Hedges, T. Demayo, and H. Sigworth, Chevron Energy Technology Company</i>	
<b>SPE 116300 Experimental Study and Modeling of Cuttings Transport Using Foam with Drillpipe Rotation .....</b>	<b>3823</b>
<i>Mingqin Duan, Stefan Miska, Mengjiao Yu, Nicholas Takach, and Ramadan Ahmed, University of Tulsa, and John Hallman, Weatherford International</i>	
<b>SPE 116306 Effect of Porosity and Permeability on the Membrane Efficiency of Shales .....</b>	<b>3836</b>
<i>Collins E. Osuji, SPE, Martin E. Chenevert, SPE, and Mukul M. Sharma, SPE, University of Texas at Austin</i>	

<b>SPE 116328 Characterization of Reservoir Heterogeneity Through Fluid Movement Monitoring with Deep Electromagnetic and Pressure Measurements .....</b>	<b>3848</b>
<i>Lang Zhan, SPE, and Fikri Kuchuk, SPE, Schlumberger; S. Mark Ma, SPE, and Ali M. Al-Shahri, SPE, Saudi Aramco; T.S. Ramakrishnan, SPE, Y.B. Altundas, SPE, Murat Zeybek, SPE, Yves Manin, SPE, Efthimos Tartaras, SPE, Romain de Loubens, SPE, and Nikita Chugunov, SPE, Schlumberger</i>	
<b>SPE 116335 Under-Rig-Floor Open Hole Logging in The Gulf of Thailand: Engineering Design Of the Oil Industry’s First Simultaneous Open Hole Wireline Logging and Drilling Operation .....</b>	<b>3864</b>
<i>Eric R. Upchurch and Kyle S. Graves, Chevron International Exploration and Production</i>	
<b>SPE 116343 Development of a Coiled Tubing Specific Well Control Training Program .....</b>	<b>3881</b>
<i>D. Egbert and H. Kendall, BJ Services</i>	
<b>SPE 116344 Next-Generation Crosswell EM Imaging Tool.....</b>	<b>3890</b>
<i>Luis DePavia, Ping Zhang, David Alumbaugh, Cyrille Leveque, Hong Zhang, and Richard Rosthal, Schlumberger</i>	
<b>SPE 116351 An Integrated Approach to Reservoir Uncertainty Assessment: Case Study of a Gulf of Mexico Reservoir .....</b>	<b>3901</b>
<i>A. Sharma, SPE, J. Leung, SPE, S. Srinivasan, SPE, U. of Texas at Austin, and Y. Kim, SPE, Baker Hughes</i>	
<b>SPE 116364 Entrance Pressure of Oil Based Mud into Shale: Effect of Shale, Water Activity, and Mud Properties .....</b>	<b>3914</b>
<i>Andres Oleas, SPE, Collins E. Osuji, SPE, Martin E. Chenevert, SPE, and Mukul M. Sharma, SPE, University of Texas at Austin</i>	
<b>SPE 116393 Petrophysical Properties Prediction Using 3D Core Scanner Imagery .....</b>	<b>3933</b>
<i>Soufi ane Jouini, Francois Umbhauer, Jean-Pierre Leduc, Noomane Keskes, Total E&amp;P</i>	
<b>SPE 116411 Experimental and Theoretical Investigation of Clogging Processes near Production Wells using X-ray Tomography .....</b>	<b>3942</b>
<i>A.H. de Zwart, P.K. Currie SPE, J. de Boer, Alireza Vafaie Naeini, Delft University of Technology, The Netherlands, and R.J. Schotting, University of Utrecht, The Netherlands</i>	
<b>SPE 116419 Seeing the Forest as Well as the Trees: Creating Value with Portfolio Optimization .....</b>	<b>3955</b>
<i>Chris Reinsvold, SPE, Eric Johnson, and Michael Menke, Decision Strategies, Inc.</i>	
<b>SPE 116440 The Impact of Some Real Options on the Efficient Frontier of Portfolios of Oil Production Projects.....</b>	<b>3962</b>
<i>G.A. Costa Lima, SPE, S.B. Suslick, SPE, and G.D. Avansi, SPE, Unicamp</i>	
<b>SPE 116460 Field Testing of an Automated Well Tester in Extra-Heavy and Diluted Oil Application.....</b>	<b>3974</b>
<i>Rafael Bastardo, Asher Imam, Weatherford; José Scoglio, Petrozuata</i>	
<b>SPE 116461 Sub-based Roller Tools Enable Effective Extended-Reach Completions Operations: Offshore West Africa .....</b>	<b>3984</b>
<i>Tim Parker Long, SPE, Chevron Houston, TX; and John Edward McCormick, SPE, Weatherford International Ltd.</i>	
<b>SPE 116469 The Successful Application of a Compartmental Completion Technique Used to Isolate Multiple Hydraulic-Fracture Treatments in Horizontal Bakken Shale Wells in North Dakota .....</b>	<b>3992</b>
<i>Brent Mille, SPE, and John Paneitz, SPE, Whiting Petroleum, and Mike Mullen, SPE, Raymund Meijis, SPE, Mike Tunstall, SPE, and Mariano Garcia, SPE, Halliburton</i>	
<b>SPE 116470 Hydraulic Fracture Predictions with a Fully Coupled Geomechanical Reservoir Simulator .....</b>	<b>4003</b>
<i>R.H. Dean, SPE, and J.H. Schmidt, SPE, Chevron Energy Technology Company</i>	
<b>SPE 116474 Completion Design for Sandface Monitoring of Subsea Wells.....</b>	<b>4015</b>
<i>S. Mackay, SPE, J. Lovell, SPE, D. Patel, SPE, F. Cens, SPE, and S. Escanero, SPE, Schlumberger</i>	

<b>SPE 116476 Sensor Architecture for Open Hole Gravel Pack Completions</b> .....	4024
<i>H.S. Gambhir, Reliance Industries Ltd.; A. Shrivastav, Bechtel O &amp; G; J. Lovell, SPE, S. Mackay, SPE, C. Chouzenoux, SPE, B. Juchereau, SPE, F. Arachman, SPE, and A. Chaudhary, SPE, Schlumberger</i>	
<b>SPE 116485 Parametric Study to Enhance Oil Recovery Rate from Fractured Oil-Wet Carbonate Reservoirs</b> .....	4034
<i>R. Gupta, SPE, B. Adibhatla, SPE, and K.K. Mohanty, SPE, University of Houston</i>	
<b>SPE 116525 Systematic Prediction Errors in O&amp;G Project and Portfolio Selection</b> .....	4045
<i>S.H. Begg, SPE, University of Adelaide, and R.B. Bratvold, SPE, University of Stavanger</i>	
<b>SPE 116554 Drilling Hard and Abrasive Rock Efficiently, or Generating Quality Cuttings? You No Longer Have to Choose...</b> .....	4056
<i>Sébastien Desmette, SPE, Benoît Deschamps, SPE, and Ron Birch, SPE, Diamant Drilling Services, and Matthieu Naegel, SPE, and Philippe Essel, SPE, Total</i>	
<b>SPE 116555 A Guide to Successful Backreaming: Real-Time Case Histories</b> .....	4075
<i>G. Yarim, SPE, G.M. Ritchie, SPE, and R.B. May, SPE, Schlumberger</i>	
<b>SPE 116560 Economics of Oil Shale Development in the United States</b> .....	4092
<i>Khosrow Biglarbigi, INTEK Inc.; Anton Dammer, U.S. Department of Energy; and Hitesh Mohan and Marshall Carolus, INTEK Inc.</i>	
<b>SPE 116570 Advances in World Oil Shale Production Technologies</b> .....	4101
<i>Peter M. Crawford and Khosrow Biglarbigi, Intek Inc.; Anton R. Dammer, U.S. Department of Energy; and Emily Knaus, Intek Inc.</i>	
<b>SPE 116575 The Determination of Minimum Tested Volume from the Deconvolution of Well Test Pressure Transients</b> .....	4112
<i>Tim Whittle, BG Group, and Alain Gringarten, Imperial College London</i>	
<b>SPE 116580 A Comprehensive Comparative Study on Analytical PI/IPR Correlations</b> .....	4121
<i>Suk Kyoong Choi, SPE, The University of Texas at Austin, and Liang-Biao Ouyang, SPE, and Wann-Sheng (Bill) Huang, SPE, Chevron Energy Technology Company</i>	
<b>SPE 116581 A Comprehensive Study on the Effect of Compliance on Productivity</b> .....	4140
<i>Drew Hembling, Eric Lauritzen, James Phillips, and Ali Rabba, Saudi Aramco, and Colin Jones, Steve Beare, Quentin Morgan, and John Cameron, Weatherford</i>	
<b>SPE 116582 The Importance of Culture in Safe Work Environments</b> .....	4152
<i>J. O'Connor, T. Woodrick, N. Schneeberger, J. Dettmann, and J. Kuang, Towers Perrin-ISR</i>	
<b>SPE 116583 Modeling Permeability in Tight Gas Sands Using Intelligent and Innovative Data Mining Techniques</b> .....	4164
<i>Liaqat Ali, SPE, Sandip Bordoloi, and Serene H. Wardinsky, ConocoPhillips</i>	
<b>SPE 116592 Use of Combined Material Balance and Volumetric Analysis to Improve Performance Predictions In a Large Coproduction Field Project</b> .....	4175
<i>James E. Smith, Dalian V. Payne, Cory L. Desantis, and Owen L. Broyles, Devon Energy Corp.</i>	
<b>SPE 116596 Microseismic Deformation Rate Monitoring</b> .....	4185
<i>S.C. Maxwell, J. Shemeta, E. Campbell, and D. Quirk, Pinnacle Technologies</i>	
<b>SPE 116599 Environmental Considerations Related to Oil Shale Development</b> .....	4194
<i>Emily J. Knaus, INTEK Inc., Anton R. Dammer, U.S. Department of Energy</i>	
<b>SPE 116600 Prestack Seismic Inversion Tracks In Situ Combustion: 4D Seismic at the Balol Field, India</b> .....	4204
<i>Mrinal K. Sen, University of Texas at Austin, USA; and Nimisha Vedanti, NGRI, CSIR, India</i>	
<b>SPE 116601 Matrix Acidizing of Carbonate Reservoirs Using Organic Acids and Mixture of HCl and Organic Acids</b> .....	4212
<i>F.F. Chang, SPE, Schlumberger; H.A. Nasr-El-Din, SPE, Texas A&amp;M University; and T. Lindvig and X.W. Qiu, Schlumberger</i>	
<b>SPE 116602 Profitability of Deepwater Petroleum Leases: Empirical Evidence from the U.S. Gulf of Mexico Offshore Region</b> .....	4221
<i>Omowumi O. Iledare, SPE, LSU Center for Energy Studies</i>	

<b>SPE 116610 Modeling the Economic Impact of Individual and Corporate Risk Attitude</b> .....	4234
<i>M.B. Welsh, SPE, and S.H. Begg, SPE, Australian School of Petroleum, University of Adelaide</i>	
<b>SPE 116612 Cognitive Errors in Estimation: Does Anchoring Cause Overconfidence?</b> .....	4244
<i>A.B. Heywood-Smith, SPE, Epic Energy, M.B. Welsh, SPE, and S.H. Begg, SPE, Australian School of Petroleum, University of Adelaide</i>	
<b>SPE 116616 Optimization for Operational Decision Support: The Rig Fleet Management Case?</b> .....	4254
<i>Morten Irgens, Actenum Corporation; Ricardo Prieto Guzman and Jacqueline Stamatopoulos, Saudi Aramco; and Ken Jackson, Actenum Corporation</i>	
<b>SPE 116633 Minimizing Sanding Risk by Optimizing Well and Perforation Trajectory Using an Integrated Geomechanical and Passive Sand-Control Approach</b> .....	4268
<i>Khalil Rahman, SPE, Abbas Khaksar, SPE, Toby Kayes, SPE, Helix RDS</i>	
<b>SPE 116634 The Impending Expertise Crisis: New Technology Comes to the Rescue</b> .....	4284
<i>Morten Irgens, Actenum Corporation</i>	
<b>SPE 116646 A Case Study of Hydraulically Fractured Eddy County, New Mexico, Horizontal Wolfcamp Producers</b> .....	4294
<i>Arthur S. Metcalf, SPE, and Juan Coronado, SPE, BJ Services, and Kelvin Fisher, SPE, Dave E. Kvasnicka, and Joel S. Castello, SPE, LCX Energy, LLC</i>	
<b>SPE 116649 New Grids for Robust Reservoir Modeling</b> .....	4310
<i>E. Gringarten, SPE, B. Arpat, SPE, A. Haouesse, SPE, A. Dutranois, L. Deny, S. Jayr, A.L. Tertois, and J.L. Mallet, SPE, Paradigm, and A. Bernal, SPE, and L. Nghiem, SPE, CMG</i>	
<b>SPE 116651 Initial State of Stress: The Key to Achieving Long-Term Cement-Sheath Integrity</b> .....	4321
<i>Jérémie Saint-Marc and André Garnier, Total, and Axel-Pierre Bois, CurisTec</i>	
<b>SPE 116655 Accurate Single-Ended Distributed Temperature Sensing</b> .....	4335
<i>Yuehua Chen, Rogerio T. Ramos, Arthur H. Hartog, Robert Greenaway, Giles Powell, and David Taylor, Schlumberger</i>	

## Volume 7

<b>SPE 116659 Artificial Lift Optimization in the Orito Field</b> .....	4341
<i>Sandy Williams, SPE, ALP Ltd., and Rafael Rozo, SPE, Fernando Pérez Aya, and José Ismael Salazar Hernández, Petrominerales Colombia Ltd.</i>	
<b>SPE 116661 Optimizing Injection Intervals in Vertical and Horizontal Wells for CO<sub>2</sub> Sequestration</b> .....	4365
<i>Navanit Kumar, SPE, and Steven L. Bryant, SPE, The University of Texas at Austin</i>	
<b>SPE 116663 Capillarity Controlled Displacements in Sediments with Movable Grains: Implications for Growth of Methane Hydrates</b> .....	4384
<i>Maša Prodanović and Steven L. Bryant, SPE, University of Texas at Austin</i>	
<b>SPE 116665 Distributed Temperature Sensor Measures Temperature Resolution in Real Time</b> .....	4399
<i>M.R. Hadley and R. Kimish, Schlumberger</i>	
<b>SPE 116667 Identifying Inefficient Drilling Conditions Using Drilling-Specific Energy</b> .....	4409
<i>Miguel Armenta, SPE, Shell EPT-WT</i>	
<b>SPE 116672 Polymer Injection in Deep Offshore Field: The Dalia Angola Case</b> .....	4425
<i>D. Morel, M. Vert, Total E&amp;P, S. Jouenne, Total Petrochemicals France, E. Nahas, Total E&amp;P</i>	
<b>SPE 116673 Sand or Mud Removal in Low Bottom Hole Pressure Wellbores Using Jet Pump and Concentric Coiled Tubing Leads to Improved Production</b> .....	4437
<i>J. Li, A. Crabtree, M. Kutchel, and J. Diaz, BJ Services Company, and W. Reyes, R. Dugarte, and L. Peña, PDVSA</i>	

<b>SPE 116675 from Mega-Cell to Giga-Cell Reservoir Simulation</b> .....	4460
<i>Ali H. Dogru, Larry S.K. Fung, Tareq M. Al-Shaalán, Usuf Middyá, and Jorge A. Pita, Saudi Arabian Oil Company</i>	
<b>SPE 116681 Application of the Efficient Frontier Concept to Resource Play Budget Evaluation and Portfolio Optimization</b> .....	4478
<i>Robert R. Tonnsen, SPE, EnCana Oil &amp; Gas (USA) Inc.</i>	
<b>SPE 116688 Production Data Analysis of Shale Gas Reservoirs</b> .....	4490
<i>Adam M. Lewis and Richard G. Hughes, Louisiana State</i>	
<b>SPE 116689 Oilfield Trainees Benefit from PDA-Based Applications</b> .....	4505
<i>J.A. Hughes and R. Martin, BJ Services Company, and J.V. Guerrero, Warrior Technology Services, Inc.</i>	
<b>SPE 116695 Evaluation of Reservoir Connectivity and Development Recovery Strategies in Monument Butte Field, Utah</b> .....	4511
<i>Jianwei Wang, SPE, Joseph Abiazie, SPE, Duane A. McVay, SPE, and Walter B. Ayers, SPE, Texas A&amp;M University</i>	
<b>SPE 116697 Dynamic Decision Trees as an Alternative for Real Options Valuation</b> .....	4530
<i>C.F. Galvis, SPE, and O. Bravo, SPE, ECOPETROL S.A.</i>	
<b>SPE 116698 Best Practices in Designing HP/HT Cement-Plug Systems</b> .....	4539
<i>Haidher Syed, SPE, BJ Services Company</i>	
<b>SPE 116709 Sustainable Spatial Architecture for Geo Engineering Data and Workflows</b> ....	4549
<i>Jess Kozman, Schlumberger, and Thomas Ripley, SAIC</i>	
<b>SPE 116711 A New Solution to Restore Productivity of Gas Wells with Condensate and Water Blocks</b> .....	4569
<i>Vishal Bang, SPE, Gary A. Pope, SPE, and Mukul M. Sharma, SPE, The University of Texas at Austin; Jimmie R. Baran Jr., 3M; and Mohabbat Ahmadi, The University of Texas at Austin</i>	
<b>SPE 116713 Sand Quantification: The Impact on Sandface Completion Selection and Design, Facilities Design and Risk Evaluation</b> .....	4583
<i>M.A. Addis, SIEP, M.C. Gunningham, SEIC, Ph. Brassart, SEIC, J. Webers, SEIC, H. Subhi, SEIC, J.A. Hother, Proneta</i>	
<b>SPE 116717 Investigation of Economic Incentives for CO<sub>2</sub> Sequestration</b> .....	4601
<i>Yousef Ghomian, SPE, Mehmet Urun, SPE, Gary A. Pope, SPE, and Kamy Sepehrnoori, SPE, The University of Texas at Austin</i>	
<b>SPE 116719 Development of a Response Surface Based Model for Minimum Miscibility Pressure (MMP) Correlation of CO<sub>2</sub> Flooding</b> .....	4621
<i>Yousef Ghomian, SPE, Gary A. Pope, SPE, and Kamy Sepehrnoori, SPE, The University of Texas at Austin</i>	
<b>SPE 116731 Exponential vs. Hyperbolic Decline in Tight Gas Sands - Understanding the Origin and Implications for Reserve Estimates Using Arps' Decline Curves</b> .....	4637
<i>D. Ilk, Texas A&amp;M University, J.A. Rushing, Anadarko Petroleum Corp., A.D. Perego, Anadarko Petroleum Corp., and T.A. Blasingame, Texas A&amp;M University</i>	
<b>SPE 116732 A New Method of Well-Test Analysis in Naturally Fractured Reservoirs Based on Elliptical Flow</b> .....	4660
<i>Alpheus O. Igbokoyi and D. Tiab, SPE, University of Oklahoma</i>	
<b>SPE 116733 Pressure Transient Analysis in Partially Penetrating Infinite Conductivity Hydraulic Fractures in Naturally Fractured Reservoirs</b> .....	4681
<i>Alpheus O. Igbokoyi and D. Tiab, SPE, University of Oklahoma</i>	
<b>SPE 116735 Modeling Foam Displacement with the Local Equilibrium Approximation: Theory and Experiment Verification</b> .....	4700
<i>Q. Chen, SPE, M. G. Gerritsen, SPE, and A. R. Kovscek, SPE, Stanford University</i>	
<b>SPE 116738 Analyzing Buildup Data Following a Highly Unstable Rate History</b> .....	4719
<i>Leif Larsen, SPE, Kappa Engineering and The University in Stavanger</i>	

<b>SPE 116740 Real-Time Data Enables Real-Time Decision Making in Well Intervention Operations</b> .....	4729
<i>Sidney Huval, Jim McNicol, Baker Hughes</i>	
<b>SPE 116744 Equivalent Skin Factors for Nonuniformly Damaged Horizontal and Multilateral Wells</b> .....	4735
<i>Turhan Yildiz, SPE, Colorado School of Mines</i>	
<b>SPE 116746 Smart Chemical Systems for the Stimulation of High-Water-Cut Heavy Oil Wells</b> .....	4752
<i>Mohamed Ahmed Samir and Islam Elnashar, Scimitar, and Mathew Samuel and Mohamed Jemmali, SPE, Schlumberger</i>	
<b>SPE 116748 The Impact of Gravity Segregation on Multiphase Non-Darcy Flow in Hydraulically Fractured Gas Wells</b> .....	4766
<i>Mark I. Dickins, SPE, Duane A. McVay, SPE, Texas A&amp;M U., and Stephen K. Schubarth, SPE, Schubarth Inc.</i>	
<b>SPE 116752 Efficient Region Decomposition for Parallel Simulation Accounting for Uncertainty in the Reservoir Model</b> .....	4780
<i>Yonghwee Kim, SPE, Sanjay Srinivasan, SPE, and Steven L. Bryant, SPE, The University of Texas at Austin</i>	
<b>SPE 116754 ASP Chemical Flooding Without the Need for Soft Water</b> .....	4801
<i>Adam K. Flaaten, SPE, Quoc P. Nguyen, SPE, Jieyuan Zhang, SPE, Hourshad Mohammadi, SPE, and Gary A. Pope, SPE, The University of Texas at Austin</i>	
<b>SPE 116757 Responsive Cementing Material Prevents Annular Leaks in Gas Wells</b> .....	4816
<i>H. Bouras, and N. Doumaz, Sonatrach, and M. Bellabarba, E. Caceres, S. Mananga, S. Le Roy-Delage, SPE, M. Gamal Abd-El Aziz, and M. Rebbou Benberber, Schlumberger</i>	
<b>SPE 116758 Bridging the Gap between Real-Time Optimization and Information-Based Technologies</b> .....	4826
<i>Michael Brulé, Technomation, Yanni Charalambous, Oxy, Mark L. Crawford, ExxonMobil Global Services Company, Charles Crawley, Chevron</i>	
<b>SPE 116759 Effect of Chloride Concentration on the Stress Corrosion Cracking (SCC) of CRA Tubulars and Methods to Enhance SCC Resistance in High-Temperature Environments</b> .....	4835
<i>Paul H. Javora, SPE, Mingjie Ke, SPE and Katrina Schultz, BJ Services Company</i>	
<b>SPE 116764 A New Method of Plunger Lift Dynamic Analysis and Optimal Design for Gas Well Deliquifcation</b> .....	4841
<i>Yula Tang, SPE, Chevron Energy Technology Company, Zheng Liang, Southwest Petroleum Institute</i>	
<b>SPE 116765 Analysis of Thread Engagement Requirements for Studs and Nuts</b> .....	4855
<i>J. Anders, SPE, D. Cismoski, SPE, and P.D. Pattillo, SPE, BP Exploration (Alaska) Inc., and S.A. Fox and D. Pitts, Stress Engineering Services</i>	
<b>SPE 116768 Multi-Row Steel PDC Drill Bit Technology Redefnes Performance Standards in Hard, Interbedded, and Abrasive Applications</b> .....	4861
<i>Tim Beaton, X-treme Bits &amp; Downhole Tooling; Mike Krooshoop, Pengrowth; and J.J. Herman, X-treme Bits &amp; Downhole Tooling</i>	
<b>SPE 116769 A Decade of Experience—The Water-Based Thermal Insulating Packer Fluid</b> .....	4873
<i>Paul H. Javora, SPE, Rick Percy, SPE, Xiaolan Wang, SPE, Dick Stevens, SPE, and Qi Qu, SPE, BJ Services Company</i>	
<b>SPE 116771 Prudhoe Bay Well P2-15 Surface Casing Failure</b> .....	4880
<i>J. Anders, SPE, D. Cismoski, SPE, R. Daniel, SPE, A. Dube, SPE, H. Engel, SPE, A. Hughes, SPE, and T. Norene, SPE, BP Exploration (Alaska) Inc.; R. Hamilton, FMC; W. Mohr, Edison Welding Institute</i>	
<b>SPE 116773 Pain and Regret</b> .....	4885
<i>William Haskett</i>	

<b>SPE 116777 Thermodynamics of Compact Downhole Turbo Generators .....</b>	<b>4895</b>
<i>V. John Fernandez, Novatek; Parthasarathi Ghosh, Indian Institute of Technology, Kharagpur; and Darryl James, Texas Tech University</i>	
<b>SPE 116820 3D GIS as an Integrated Framework for Drilling Site Location Optimization ....</b>	<b>4910</b>
<i>Milad A. Ershaghi, SPE, University of Southern California</i>	
<b>SPE 116822 Thru-Tubing Conveyed ESP Pump Replacement—Live Well Intervention .....</b>	<b>4928</b>
<i>Walter Dinkins and Steve Tetzlaff, Baker Hughes; John C. Patterson, ConocoPhillips Company; Hai Hunt, Peter Nezaticky, James Rodgers, ConocoPhillips Alaska, Inc.; and Bret Chambers, BP Exploration (Alaska) Inc.</i>	
<b>SPE 116823 Multiple Mixing-Cell Method for MMP Calculations .....</b>	<b>4943</b>
<i>Kaveh Ahmadi, SPE, and Russell T. Johns, SPE, University of Texas at Austin</i>	
<b>SPE 120193 Strength Analysis of Expandable Tubular for Well Applications .....</b>	<b>4954</b>
<i>Ana Carolina Caldas Aguiar, Petroleum engineering department, Federal University of Rio de Janeiro, Brazil</i>	
<b>SPE 120194 Model for the Straining of Fines in Unconsolidated Sands .....</b>	<b>4964</b>
<i>Elena Rodriguez, SPE, Dept. of Geosystems and Petroleum Engineering, The University of Texas at Austin</i>	
<b>SPE 120195 Redeveloping a Permian Basin Waterflood .....</b>	<b>4973</b>
<i>Eric M Looney, The University of Texas at Austin</i>	
<b>SPE 120196 An Analytical Model to Predict Segregated Flow in the Downhole Water Sink Completion and Anisotropic Reservoir .....</b>	<b>4980</b>
<i>Fia Adhi Utama, Institut Teknologi Bandung</i>	
<b>SPE 120197 Validation of Simplified Mathematical Model for Turbidity Currents .....</b>	<b>4994</b>
<i>Luiz F. Bitton; Luiz F. Martha; David Waltham; Gareth Keevil; Jeff Peakall</i>	
<b>SPE 120198 Modeling of Reservoir Temperature Transients and Parameter Estimation Constrained to the Model .....</b>	<b>5003</b>
<i>Obinna Duru, SPE, Stanford University</i>	
<b>SPE 120199 Remote Sensing, Fuzzy Logic and GIS in Petroleum Exploration .....</b>	<b>5019</b>
<i>S. Reza Taheri, Department of Petroleum Engineering, Curtin University of Technology, Western Australia</i>	
<b>SPE 120200 Bypassed Oil Detection Using Spectroscopy and Nano Technology .....</b>	<b>5021</b>
<i>Shruti Ravindra Jahagirdar, SPE, Maharashtra Institute of Technology</i>	
<b>SPE 120201 Numerical Temperature Prediction System in Injection Tubing, Bottom Hole and Reservoir Condition for Supercritical CO<sub>2</sub> Injection into Deep Coal Seams .....</b>	<b>5027</b>
<i>Tetsu Yasunami, Maharashtra Institute of Technology</i>	
<b>SPE 120202 Streamline Simulation with Compressibility and Spatial and Dynamic Variation in Oil Composition.....</b>	<b>5042</b>
<i>Valcir Tadeu Beraldo, Unicamp</i>	
<b>SPE 120203 Development of a Fully Implicit, Parallel, EOS Compositional Simulator to Model Asphaltene Precipitation in Petroleum Reservoirs.....</b>	<b>5053</b>
<i>Waleed Fazelipour, SPE, Roxar; Gary A. Pope, SPE, and Kamy Sepehrnoori, SPE, CPGE</i>	

## Author Index