Table of Contents

Committees

SPE 97070  Identifying the Timing and Sources of Damage in Gas Storage Wells Using Smart Storage Technology ......................................................... 1

SPE 98236  Sustaining Conductivity .................................................................................................................. 11
J.D. Weaver, D.W. van Batenberg, M.A. Parker, and P.D. Nguyen, Halliburton Energy Services Group

SPE 104223  Lasers: The Next Bit .................................................................................................................. 25
Shahvir Pooniwala, Maharashtra Inst. of Technology

SPE 104226  Expandable and Contractable Bit ............................................................................................. 35
Sharad Ashok Agarwal, Maharashtra Inst. of Technology

SPE 104280  Nanologging: Use of Nanorobots for Logging ........................................................................ 38
Pratyush and Sumit Bhat, Halliburton India

SPE 104281  Microbe-Enhanced Oil Recovery Technology Obtains Huge Success in Low-Permeability Reservoirs in Daqing Oilfield ................................................................. 45

SPE 104290  Guidelines to Successful Dewatering of CBM Wells ............................................................... 53
L. Bassett, Weatherford

SPE 104299  Pipeline Corrosion: Its Remote Detection and Corrosion Management ............................... 58
Manish Kumar Sinha, Indian School of Mines

SPE 104306  Case Study: Optimizing Hydraulic Fracturing Performance in Northeastern United States Fractured Shale Formations ................................................................. 62
J. Paktinat, J.A. Pinkhouse, N. Johnson, and C. Williams, Universal Well Services Inc.; G.G. Lash, State U. of New York–Fredonia; and G.S. Penny and D.A. Goff, CESI Chemical

SPE 104307  KPIM of Gas/Condensate Productivity: Prediction of Condensate/Gas Ratio (CGR) Using Reservoir Volumetric Balance ................................................................. 73
A.F. Olaberinjo, U. of Lagos, Nigeria; M.O. Oyewola, U. of New South Wales, Australia; O.A. Adeyoyinju and O.A. Alli, U. of Lagos, Nigeria; A.D. Obiyemi, Ospotech, Nigeria; and S.O. Ajala, Globacom, Nigeria
SPE 104314 Economic Pumping Technology for Coalbed Methane (CBM), Stripper Oil, and Shallow Gas Well Deliquification .................................................................80
Michael W. Dickey, SmithLift LLC

SPE 104319 Obtaining Permeability Values in a Coalbed Methane Core-Hole Utilizing Slimhole Technology Coupled With an Injection/Falloff Technique .................................................83
G. Rodvelt, Halliburton; R. Toothman and J. Hayhurst, CNX Gas Co. LLC; and R. Oestreich, A-Strike Consulting

SPE 104380 A Permeability Model for Coal and Other Fractured, Sorptive-Elastic Media ......89
Eric P. Robertson, Idaho Natl. Laboratory, and Richard L. Christiansen, Colorado School of Mines

SPE 104458 An Innovative Method: Risk Assessment for Exploration and Development of Oil and Gas .........................................................................................................................101
Yuwen Chang, Hong’en Dou, Changchun Chen, and Xiaolin Wang, RIPED, PetroChina Co. Ltd., and Kun Liu, PetroChina Co. Ltd.

SPE 104472 Cased-Hole Formation Resistivity (CHFR) Technique Improves Hydrocarbon Saturation Monitoring in Developed Reservoirs .................................................................107
G.M. Hamada, KFUPM

SPE 104479 Air Injection and Waterflood Performance Comparison of Two Adjacent Units in Buffalo Field: Economic Analysis .................................................................123
V.K. Kumar, El Paso Production Co., and D. Gutierrez, R.G. Moore, and S.A. Mehta, U. of Calgary

SPE 104491 Huff ‘n’ Puff Recovery Technique on Waterout Horizontal Wells .................134
Chunhong Wang and Gaoming Li, U. of Tulsa

SPE 104520 Optimizing Horizontal-Well Steam-Stimulation Strategy for Heavy-Oil Development .........................................................................................................................141
Shanqiang Luo and Andy Baker, Schlumberger

SPE 104526 Revitalizing the Richard King Field: Using New Technology in a Cost-Effective Manner on Mature Fields .......................................................................................147
Jeff Swanson and Greg Stevens, Durango Resources, and Rod Hall, GrailQuest Corp.

SPE 104535 Optimal Well-Testing Strategy for Production Optimization:
A Monte Carlo Simulation Approach .................................................................................151
H.P. Bieker, NTNU; O. Slupphaug, ABB; and T.A. Johansen, NTNU

SPE 104546 Granite Wash Field Study—Buffalo Wallow Field, Texas Panhandle ...............157
Stephen Ingram and Isaac Paterniti, Halliburton, and Brian Rothkopf and Chris Stevenson, Forest Oil Corp.

SPE 104547 New Methods and Equipment for Dewatering Unconventional Gas Resources Using Sucker-Rod Pumping Equipment ...............................................................170
Mark W. Mahoney and Randy DeWerff, Harbison-Fischer

SPE 104550 Identifying Infill Locations and Underperformer Wells in Mature Fields Using Monthly Production Rate Data, Carthage Field, Cotton Valley Formation, Texas ..........177
J. Jalali, S.D. Mohaghegh, and R. Gaskari, West Virginia U.
SPE 104551 Risk Analysis for Water Injection in a Petroleum Reservoir Considering Geomechanical Aspects..................................................................................................................184

SPE 104554 Estimating Major and Minor Natural Fracture Pattern in Gas Shales Using Production Data..................................................................................................................199
R. Gaskari and S.D. Mohaghegh, West Virginia U.

SPE 104555 Gas Storage in a Depleted Gas/Condensate Reservoir in the Appalachian Basin.................................................................................................................................205
K. Aminian, West Virginia U.; A. Brannon, Dominion Transmision Inc.; and S. Ameri, West Virginia U.

SPE 104556 New Techniques for Plunger Lift in Conventional and Nonconventional Gas.................................................................................................................................214
Stanley J. Morrow, William Hearn, and Ramiro Cisneros, Weatherford

SPE 104557 Multistage Fracturing System: Improving Operational Efficiency and Production.............................................................................................................................218

SPE 104563 Innovations in Drilling Using Replaceable Bits .................................................................................................................................226
S.N. Banerjee, Maharashn-a Inst. of Technology

SPE 104570 Using Induced Microseismicity To Monitor Hydraulic Fracture Treatment: A Tool To Improve Completion Techniques and Reservoir Management ..................................................................................234
J.H. Le Calvez, K.V. Tanner, S. Glenn, P. Kaufman, D.S. Sarver, L. Bennett, R. Panse, and J.C. Palacio, Schlumberger

SPE 104571 An Intelligent Portfolio-Management Approach to Gas Storage Field Deliverability Maintenance and Enhancement: Part One—Database Development and Model Building ..................................................................................................................243
Kazim Malik, Shahab Mohagegh, and Razi Gaskari, West Virginia U.

SPE 104572 Successful Application of Relative-Permeability Modifiers To Control Water Production in Rose Run Fracturing.........................................................................................249
Len Fry and Don Everett, Halliburton; Mark Moody and Brad Hina, Great Lakes Energy Partners; and Jim Gessel and Steve Gessel, Green Energy

SPE 104574 Optimal Infill Drilling Design for Marginal Gas Reservoirs Using a Simulation-Based Inversion Approach ........................................................................................................256
Y. Cheng, D.A. McVay, and W.J. Lee, Texas A&M U.

SPE 104576 Improving Cement Bond in the Appalachian Basin With Adjustments to Preflush and Spacer Design..................................................................................................................270
Chandler Newhall, BJ Services

SPE 104589 Slickwater Technology Helping Greene County Enhance Natural Gas Production.................................................................................................................................280
Robert D. Mills, BJ Services Co.
SPE 104594  Plunger Lift Optimization by Monitoring and Analyzing Wellbore Acoustic Signals and Tubing and Casing Pressures ................................................................. 283
Dieter Joseph Becker, O.L. Rowlan, and J.N. McCoy, Echometer Co., and A.L. Podio, U. of Texas at Austin

SPE 104596  Identification and Analysis of Fields for Waterflood-Enhanced Recovery Efforts .................................................................................................................... 299
Rod Hall, GrailQuest Corp.; Dwight Ross, Dwight Ross Drilling Co.; Greg Stevens, GrailQuest Corp.;
and Steve Muehlberger, Island Oil & Gas

SPE 104598  Optimizing Drilling Operations in the Arkoma Basin: Building on Success .......303
Louis A. Romo, David R. Bert, and Cliff Richard, BP America; Luke Kuwertz, Schlumberger
Drilling & Measurements; William L. Koederitz, Toico; and Kirk Card and Steve Barton, Reed Hycalog