

Society of Petroleum Engineers Nigeria Annual International Conference and Exhibition 2011

**Abuja, Nigeria
1-3 August 2011**

ISBN: 978-1-61839-094-3

Printed from e-media with permission by:

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



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

Copyright© (2011) by the Society of Petroleum Engineers
All rights reserved.

Printed by Curran Associates, Inc. (2011)

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

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

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

books@spe.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

3D Reservoir Simulation of X Field Onshore Niger Delta Nigeria: The Power of Multiple Iterations

Ahmed, S., Nyeche, M., Engel, S., Nworie, E. and De Mooij, H., The Shell Petroleum Development Company of Nigeria Limited

4kast-Pro™ - A Novel Tool for Trend-based and Multi-stream Production Forecasting

Ibeh C., Adeoye A., Ibrahim J, and Reynolds K., Chevron Nigeria Limited

A Case Study of the Factors that Impact Horizontal Oil Well Production Performance in the Niger Delta

Ayoola Olakunle Thomas, SPE, Shell Nigeria, Heriot-Watt University

A New Approach to Aquifer Influx Calculation for Finite Aquifer System

Omeke James E; SPE, Nwachukwu A.; SPE, Awo R.O; SPE, Boniface Obah; SPE, Uche. I.N; SPE, Shell Chair, Federal University of Technology Owerri

A Robust Approach to Field Development Plan Integrating Multi Dynamic Reservoir Models with Surface Network

Akpoebi Ojeke, Ibiada Harrison Itotoi, and Dike Nnamdi, SNEPCO; Jonathan Umurhohwo, Sunlink Petroleum; and Osaigbovo Benjamin, SNEPCO

A Stochastic Approach to Well Spacing Optimization of Oil Reservoirs

John U. M-P. and Ibukun S., SPE, Laser Engineering, Pius J. and Kayode, O., SPE, Ankor Pointe

Advances in Mud Design and Challenges in HPHT Wells

Woha Godwin (Jnr), Joel Ogbonna and Orij Boniface; Institute of Petroleum Studies, University of Port Harcourt, Nigeria

An Approach for Ranking Realizations to Characterize Reservoirs for Fluid Flow Simulation

Lowestein Odai, SPE, and David O. Ogbe, SPE, African University of Science & Technology, Abuja, Nigeria

An Improved Estimation of the Storage Capacity of Potential Geologic Carbon-Sequestration Sites

Kazeem A. Lawal, Shell Nigeria Exploration & Production Company

Table of Contents continued...

An Integrated Approach to Identifying and Reducing Reservoir Uncertainties in a Turbidite Deep Water Environment ⁱⁱⁱⁱ€

Akingbade D., SPE, Umurhohwo J., SPE, Effiom O., SPE, Pirmez C., and Weaver S.; SNEPCO Nigeria

Analytical Evaluation of Kukaku Field ⁱⁱⁱⁱì

Ma Qiang, CUG, SIPEC; Ibukun Samson, Eke Kenneth, Laser Engineering; David Odogu, NPDC; Mike Onyekonwu, IPS UNIPORT

Application of 4D Seismic Response as a Screening Tool in Assisted History Matching ⁱⁱⁱⁱÊ

Olatunji Bakare, SNEPCO; Jonathan Umurhohwo, Sunlink Petroleum; and Ikomi John, Arinze Okonkwo, Fehintola Tope, and Osaigbovo Benjamin, SNEPCO

Application of Genetic Algorithm in Deconvolution of Logs ⁱⁱⁱⁱÊH

Peter O. Mogbolu, SPE, Graduate Petroleum Engineer; Olayinka Akinola, Graduate Electrical Engineer, Chukwuma Uguru, SPE, Shell Petroleum Dev. Coy.

Application of Intervention Analysis to Oil and Gas Production Series in Niger Delta, Nigeria ⁱⁱⁱⁱÊJ

Biu Oyinebifun. E. & Iwueze Iheanyi. S. University of Port Harcourt

Application of Microlog in Net to Gross Uncertainty Management ⁱⁱⁱⁱÊHJ

John Agubaeze, Arochukwu, Elias Arochukwu, Dare Kehinde, and Roya Simon, SP, Shell Petroleum Development Company of Nigeria

Application of the Excess Pressure Technique to Investigate Connectivity of Deepwater Turbidite Reservoirs, Offshore Nigeria ⁱⁱⁱⁱÊH

Jenakumo, T.D, Shell Nigeria Exploration & Production Co., and Ranasinghe M.K, Shell International Exploration & Production Inc.

Avoiding Misleading Performance Predictions for a Reservoir System with Limited Production Data by the Application of Experimental Design Technology ⁱⁱⁱⁱÊF

Ogbalor Cyril, SPE, SPDC Nigeria, Anthony Peacock, SPDC, Nigeria

Best Use of Production Tests – Estimating Well Productivity Parameters in the Absence of Bottomhole Pressure Tests ⁱⁱⁱⁱÊH

Ibukun Samson, Laser Engineering; Mike Onyekonwu, IPS UNIPORT

Table of Contents continued...

Capillary Pressure Curves from Nuclear Magnetic Resonance Log Data in a Deepwater Turbidite Nigeria Field – A Comparison to Saturation Models from SCAL Drainage Capillary Pressure Curves [111](#)

Olubunmi Arogun, SPE, and Chike Nwosu, SPE, SNEPCO Nigeria

Case Study: Numerical Simulation on Formation Damage in Low-Permeability Gas Reservoir [112](#)

Feng Xu, Xiao Guo, Yong Zhang, Mianmian Wang, Nan Zhang, State Key Laboratory of Oil & Gas Reservoir Geology and Exploitation; Jiudi Li, SINOPEC Shanghai Offshore Oil & Gas Company

Challenges and Remedy for Cementing of HPHT Wells in Nigerian Operation [113](#)

Shado Yetunde and Joel Ogbonna; Institute of Petroleum Studies, University of Port Harcourt, Nigeria

CO₂ EOR and Sequestration in a Depleted Gas-condensate Reservoir: UKNS Case Study [114](#)

Obuekwe MOGBO, SPE, Imperial College, London

Developing Petroleum Engineering Young Technical Professionals in Shell Nigeria – The Well Site Petroleum Engineer Model [115](#)

Sophia Ebitu, SPE, Shell Nigeria E&P

Dynamic Analysis of Stick-Slip Motion of Drillstring While Drilling [116](#)

Omojuwa, E., Osisanya, S., and Ahmed, R.; SPE, University of Oklahoma

Economic Analysis of GTP, GTL, CNG, NGH for Offshore Gas Development in Nigeria [117](#)

Osokogwu, U., Ademujimi, M., and Ajienska, J.A., Department of Petroleum & Gas Engineering, University of Port Harcourt, Choba, Port Harcourt, Rivers State, Nigeria

Economics of Monetisation of Stranded Gases in Nigeria [118](#)

Joseph, A., Umeogu, O. And Ajienska, J.A. And Ikeh, L, Department of Petroleum & Gas Engineering, University of Port Harcourt

Effect of Water-Cut on Sandstone Strength and Its Implications in Sand Production Prediction [119](#)

Joseph, A., Ilozue, C.T, Osokogwu, U and Ajienska, J.A., Department of Petroleum & Gas Engineering, University of Port Harcourt

Effectiveness of Safe Welding Systems in Eliminating Shut-in on Offshore Oil and Gas Platforms [120](#)

Todd Hutchinson, Falck Alford Louisiana, USA, and Dotun Oyeyinka, Falck Prime Atlantic, Nigeria

Table of Contents continued...

Efficient Methodology for Stimulation Candidate Selection and Well Workover Optimization

Benson Oghenovo Ugbenyen, SPE, David O. Ogbe, SPE, and Samuel O. Osisanya, SPE, African University of Science & Technology, Abuja, Nigeria

Efficient Reservoir and Production Management “LCEEM and CEEM Approach”

Biu Victor, T., Total E&P Nigeria, Buduka Stanley, Wachuku Prince, University Of Port Harcourt

Energy Resources in Africa: Curse or Blessing?

Odizuru-Abangwu I.N, SPE, SPDC Nigeria

Evaluation of Horizontal Well Completion and Performance Efficiency Using a Visual Basic Software – H-WELLEFF

Olu-Akinyemi E. G and Ajienka, J. A., SPE, Institute of Petroleum Studies, University of Port Harcourt

Facies-Based Saturation Modeling—Bonga Field

E.C. Kalu, O. O. Arogun, C. P. Pirmez, SPE, Shell Nigeria E&P Co

Field Case Deepwater Development Wells Clean-up and Testing

Chinedu Onyeonuna, Total Nigeria and Fivman Marpaung, SPE, Total, France

Field Development and Optimization Strategy of a Giant Gas Reservoir in the Gbaran-Ubie Node

Ikpera Cordelia and Eleluwor Esta, SPE, SPDC Nigeria

Foam Cementing Design and Application: A Cure for Low Gradient-Associated Problems in Deepwater Operations in the Gulf of Guinea

Oyetade Taiwo and Joel Ogbonna, Institute of Petroleum Studies, University of Port Harcourt, Nigeria

Formation Pressure While Drilling (FPWD) Tool Application in Reservoir Management—Case Study on Tetra-Mega Field, NYC Nigeria

Elizabeth C. Duru, SPE, Forrest Liu, SPE, Ilaria De Santo, SPE, Schlumberger, Oluwatosin Odewoye, Schlumberger

From Design to Operate Phase: Sand Control and High Rate Turbidite Well Performance

Ehimhen Okoh, Ogunsina Oluseye, and Allen Green, Shell Nigeria Exploration and Production Company

Table of Contents continued...

Gas Field Production System Optimization using Coupled Reservoir–Network Simulator and Optimization Framework ^{AAAA} H I

Nwakile, M. M., TU Clausthal Germany, Schulze-Riegert, R., SPT Group Hamburg, Trick, M.D., SPT Group, Calgary

Geomechanical Modelling of Thermal Effects on Wellbore Stability using the Thermo – Poro – Elastic Model in HPHT Wellbores ^{AAAA} H I

Akong Basse, Adewale Dosunmu, Bukola Olaseinde Usele Lonna, Buduka Stanley and Madu Sebastine Department of Petroleum & Gas Engineering, University of Port Harcourt, Port Harcourt

Hydrocarbon Flow Simulations in Porous and Permeable Media Using Finite Element Analyses and Discrete Fracture Network ^{AAAA} FG

Farayola K.K. and Oluokun M.T., Petroleum and Gas Engineering Programme, Department of Chemical Engineering, University of Lagos; Adeniyi. V.O., Department of Chemical Engineering, University of Lagos; Fakinlede O.A, Department of Systems Engineering, University of Lagos

Impact of the Petroleum Industry Bill on Deepwater Economics ^{AAAA} GH

Oyekunle A.A, SPE, IPS

Improved Analytical Model for Predicting Field Production Performance in Vertical Multiphase Flow in Pipes using MATLAB: A Case Study ^{AAAA} HF

Sukubo, I. A., Nigeria Petroleum Development Company Limited and Igboanugo, A. C, University of Benin

Improving Electrofacies Modeling using Multivariate Analysis Techniques: A Deepwater Turbidite Case Study ^{AAAA} H I

Adoghe L.I., SPE, Aniekwe O.S, SPE, Nwosu C., SPE, SNEPCo

Integrated 3D Modelling in a Structurally Complex Brown Field: A Foundation for Improved Reservoir Management and Optimisation of Further Development ^{AAAA} I I

Adenike Sonde, Osemoahu Omobude, Obinna Chudi, Ufuoma Oghene, Trudy Coker. SPDC Warri

Integration of Mineral Model with Carbon-Oxygen Log Interpretation to Reduce Uncertainty in Hydrocarbon Saturation ^{AAAA} I €

Ravi Kumar Sinha, Ravi Kumar, and Arun Pandey, SPE, Schlumberger

Intra-Fault Drilling/Completion in York Gas Field Development: An Economics Improvement Strategy ^{AAAA} I I

Anthony Uwaga, SPE, Centrica Energy; Jun Yan, SPE, Centrica Energy; Peter Jackson, Centrica Energy; Samson Onafeko, Centrica Energy; Paul Lukins, Centrica Energy; Chris Farrow, SPE, Integrated Production Technologies

Table of Contents continued...

Making the 'People' Content of Sustainability Reports Work – The Case of the Nigerian Oil Majors **ÀÁÁÁ Á Ì**

Deji Olatoye, Partner, The Lodt Law Offices, Lagos, Nigeria

Maximizing Profitability and Production Availability through Application of the Principles of the Medium-Term Integrated Activity Planning (MT-IAP) **ÀÁÁÁ Ì Î**

Halim Bello, Tajudeen Onabanjo, Chiorlu Godswill, Denna Linda, SPE, SPDC

Mitigating the impact of Down-Hole Shut-in Tool Failure on Gas Well Test Data Integrity: UGO -1X Case Study **ÀÁÁÁ JH**

Arochukwu EC; Kehinde DA; Aronu GC and Sa'ad Abdul-Wahab, Shell Petroleum Development Company of Nigeria Limited

Modeling and Numerical Analysis of Mud Filtration for a Well with a Finite-Conductivity Vertical Fracture: Based on Convection-Dispersion Filtrate Transport **ÀÁÁÁ €€**

Pordel Shahri, M., SPE, Petroleum University of Technology, Ahwaz, Iran, Mosleh Tehrani, M., National Iranian South Oil Company, Ahwaz, Iran, Namvar, M., University of Louisiana at Lafayette, USA

Modeling of Meter Factors for Effective Oil Accounting during Proving and Calibration of On-line Meters in Custody Transfer Units **ÀÁÁÁ FH**

Akong Basse University of Port Harcourt Adewale Dosunmu University of Port Harcourt, Joseph Amiebibama University of Port Harcourt & Etta Agbor SPDC Nigeria

Modeling Petrophysical Properties Input for Probabilistic Reserves Estimation **ÀÁÁÁ G**

Ehigie S.O.; RPS Energy, UK

Monetizing Stranded Reserves: The Role of Floating LNG **ÀÁÁÁ HF**

Chikezie Nwaoha (AMIMechE), Downstream Correspondent Petroleum Africa

New Method of Generating Approximation Profile of Highly Noisy Wireline Logs through Utilizing Wavelet Non-Parametric Regression **ÀÁÁÁ I €**

Shahvar, M.B. and Kharrat, R., Petroleum University of Technology Research Center; Dashtbesh Badounak, N., University of Tehran, Institute of Petroleum Engineering

Oil Exploitation, Local Economy and Conflict in the Oil-Bearing Areas of Nigeria's Niger Delta **ÀÁÁÁ I Ì**

Abosede Omowumi Babatunde, Peace and Conflict Studies Programme, Institute of African Studies, University of Ibadan, Nigeria

Table of Contents continued...

Optimization of Strategies for Natural Gas Utilization: Niger Delta Case Study **ÁÁÁÁÁ Í Ì**

Emmanuel Ogbe, SPE, David O. Ogbe, SPE and Omowumi Iledare, SPE, African University of Science & Technology, Abuja, Nigeria

Optimum Rate Estimation Guide in Mature Water-Prone Reservoirs **ÁÁÁÁ Í G**

Ebenezer Obe, Rick Davis, Ken Reynolds, John Ibrahim, Aluba, Oragwu, Festus Chukwu, Aito Inegbenose, Chevron Nigeria Limited

Option for Adoption of Hydrogen or Natural Gas with Emulsified Biodiesel For Pilot Injection in Dual-Fuel Operation of Diesel Engines **ÁÁÁÁ Í Ì**

Bob-Manuel K.D.H., Rivers State University of Science and Technology, Port Harcourt, Nigeria, and Crookes, R.J., Korakianitis T., and Namasivayam A.M., Queen Mary, University of London, UK

A Quick Look Drilling Evaluation Tool **ÁÁÁÁÁ Ì Ì**

Ani Bonaventure.O. SPE, Egbon Franck SPE and Francis Fusier IFP; Institute of Petroleum Studies, University of Port Harcourt

Phase Behaviour Measurements of the Fluid Properties in Flowing Multiphase Hydrocarbon Streams **ÁÁÁÁÁ € F**

Mmata, B., Azubike, A., Ikeji, K., PVT Laboratory Laser Engineering, and Prof. Onyekonwu, M., UNIPORT

Predicting Critical Internal Diameters of Onshore LNG Storage Tanks for Minimizing Boil Off Gas Production **ÁÁÁÁÁ F €**

Aimikhe, V.J., Department of Petroleum and Natural Gas Engineering, University of Port Harcourt, Port Harcourt, Nigeria

Prediction and Monitoring of Oilfield Carbonate Scales **ÁÁÁÁÁ F J**

Abbe Eseosa and Ajienska Joseph Atubokiki, SPE, Institute of Petroleum Studies, University of Port Harcourt, Nigeria

Pressure Drop Mechanism in Horizontal and Inclined Multiphase Flow Pipes under Low Sand Loading **ÁÁÁÁÁ G J**

Oluyemi G.F, SPE, and Olusegun T. O, SPE; Robert Gordon University, Aberdeen UK

Pressure Redistribution and Aquifer Influx Modelling using Statistical Models, Direct Declining, Sum of Time Step, and Log-determinant Approach **ÁÁÁÁÁ H Ì**

Biu Victor. T. Total E & P Nigeria, Biu Emmanuel, Buduka Stanley, Wachuku Prince, University of Port Harcourt

Properly Use Effect of Capillary Number on Residual Oil Saturation **ÁÁÁÁÁ I J**

Bashiri, A., SPE and N. Kasiri, SPE; CAPE Center, Iran University of Sci. & Tech., Narmak, Tehran, Iran

Table of Contents continued...

Properties of Salt Formations Essential for Modeling Instabilities While Drilling ÁÁÁÁ Á G

Emmanuel O. Omojuwa, Samuel O. Osisanya and Ramadan Ahmed, SPE, University of Oklahoma

Reconciling and Improving the Volumetrics of Nigerian Heavy Oil and Bitumen Resources ÁÁÁÁ Î I

Kazeem A. Lawal, Shell Nigeria Exploration & Production Company

Revisit Material Balance Equation for Naturally Fractured Reservoirs ÁÁÁÁ Ì Ì

Bashiri, A., SPE and N. Kasiri, SPE; CAPE Center, Chem. Eng. Dept., Iran University of Sci. & Tech., Narmak, Tehran, Iran

Rim Oil Economic Maximum Efficient Rate and Reserve Potential Evaluation ÁÁÁÁ Ì Î

Ike, I. A., SPE and Mbee, O., SPE; African University of Science and Technology, Abuja

Sedimentary Controls on Porosity and Permeability in Deepwater Turbidites ÁÁÁÁ JG

Chukwueke Njoku and Carlos Pirmez, Shell Nigeria Exploration & Production Company

Semi-Analytical Models on the Effect of Drilling Fluid Properties on Rate of Penetration (ROP) ÁÁÁÁ JÏ

Alum, Moses A. O, SPE, Institute of Petroleum Studies, University of Port Harcourt, Nigeria; and Egbon, F, SPE, Total E & P Nig Ltd.

Simulation of CO₂ Enhanced Oil Recovery in Heterogeneous Models ÁÁÁÁ F€

Biu Victor. T. Total E & P Nigeria

Specific Heat Capacity of Natural Gas; Expressed as a Function of Its Specific Gravity and Temperature ÁÁÁÁ GF

Kareem Lateef, Adewale, SPE, King Fahd University of Petroleum and Minerals, and Omeke James, SPE, Shell Chair, Federal University of Technology Owerri

The Crux of the Matter in Achieving a Stable Niger Delta – A Case Study ÁÁÁÁ HÏ

Ike, I. A. SPE, African University of Science and Technology, Abuja

The Impact of Sand Control Techniques on the Efficiency of Horizontal Wells ÁÁÁÁ I F

Joseph. A., Arinze, .U., Ajienka, J.A and Ikeh, L, Department of Petroleum & Gas Engineering, University of Port-Harcourt, Nigeria

The Integrated Technology of Water Detection, Shutoff and Regulating Separate Layer Production in the Oil Recovery Process ÁÁÁÁ Í €

WanFu Zhou, ShuJin Zhang, Lei Yu, Quan Zhou, Lei Shi and ChunRong Liu, The Production Engineering and Research Institute Of Daqing Oilfield Company Ltd. Daqing, P.R.China

Table of Contents continued...

The Strategic Aggregator and Securitization of Gas Sales Agreements – The Nigerian Experience **ÁÁÁÁ Í Î**

Odizuru-Abangwu I.N, SPE, SPDC Nigeria and Okoronkwo V.I. SPE, SPDC Nigeria

Total Asset Surveillance and Management **ÁÁÁÁ Í €**

*Wokoma, E, Okuns, G, Idachaba, F.E, Shell Petroleum Development Company of Nigeria
Edghill, P, Pickburn, A, and Ashion, O, Schlumberger*

Validation of a Pseudocomponent Scheme for Nigerian Heavy Oil and Bitumen **ÁÁÁÁ Í Î**

Kazeem A. Lawal, Shell Nigeria Exploration & Production Company

Effect of Salinity Changes of the Injected Water on Water Flooding Performance In Carbonate Reservoirs **ÁÁÁÁ Ì Ì**

*Jiboku Idowu and Jim Somerville, Heriot Watt University, Deola Adebari, Dubai Petroleum,
Oluwafisayo Meshioye, Laser Engineering and Resource Consultant Ltd*

Investigation of Fracture Ballooning and Breathing in Naturally Fractured Reservoirs: Effect of Fracture Deformation Law **ÁÁÁÁ J €**

*Pordel Shahri, M., SPE, Petroleum University of Technology, Ahwaz, Iran, Zeyghami, M., SPE,
Petroleum University of Technology, Ahwaz, Iran, Majidi, R., SPE, University of Tulsa Drilling
Research Projects, USA*

Production Logging in Open Hole Completions **ÁÁÁÁ J Ì**

*Nnoaham Ikechukwu; Anyaehie James; Akam, Somadina, and Ekeigwe Augustine,
Shell Petroleum Development Company of Nigeria*

Rock typing and Generalization of Permeability- Porosity Relationship for an Iranian Carbonate Gas Reservoir **ÁÁÁÁ € Ì**

M. Shabaninejad, M. Bagheripour Haghighi, SPE, South Zagros Oil & Gas Production Company, NIOC

Application of Near Neutral Pickling Fluid in Workover Riser Pickling and Fishing Operation in the Niger Delta: Case Histories **ÁÁÁÁ F Í**

Abiodun Oladiipo, SPE, Samuel Mofunlewi, SPE, and Abidemi Bankole, SPE, BJ Services Co.

Comparing the Effects of Pipe Diameter on Flow Capacity of a CO₂ Pipeline **ÁÁÁÁ G G**

Ikeh, L. and Race, J.M; University of Newcastle Upon-Tyne, and Aminu, A. G; Ptdf Abuja

Experimental Studies of Sand Production from Unconsolidated Sandstone Niger-Delta Petroleum Reservoir **ÁÁÁÁ G**

Adeyanju, O.A, and Oyekunle, L.O., University of Lagos, Nigeria

Table of Contents continued...

Hydrocarbon And Mineral Exploration Using Thermoluminescence and Cathodoluminescence H

Sultan Alimuddin, Nihar Shah, Kanan Gandhi, and Swapnil Satyam, Pandit Deendayal Petroleum University

Impact of Impermeable Shale Streaks on Production I €

C.I. Uguru, H.A. Obiwevbi, J. Oni, Shell Petroleum Development Company of Nigeria

Modelling System Failures of Electric Submersible Pumps in Sand Producing Wells I J

Kalu-Ulu, T.C, SPE; Schlumberger, Andrawus, J.A, SPE; Robert Gordon University, UK and George, I.P.S, SPE; NAOC

Prediction of Stuck Pipe in Iranian South Oil Fields Using Multivariate Statistical Analysis I I

Shoraka, S.A.R., National Iranian South Oil Company, Shadizadeh, S.R., SPE, Petroleum University of Technology, Ahwaz, Iran, Pordel Shahri, M., SPE, Petroleum University of Technology, Ahwaz, Iran

Safeguarding Well Integrity in a Deepwater Field – The Bonga Field Experience I I

Sophia Ebitu, SPE, Uchenna Orekyeh, SPE and Philip Bogaert, SPE, Shell Nigeria E&P Co. (SNEPCo)

Wellbore Strengthening and Borehole Stability: A Geomechanical Model to Increase the Thin Mudweight Window in Vertical and Deviated Wellbores I G

Akong Basse, University of Port Harcourt, Adewale Dosunmu, Stanley Buduka, University of Port Harcourt, and Tunde Alabi, SPDC Port Harcourt