# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Paper ID</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC 19128</td>
<td>Pipeline Embedment in Deep Water: Processes and Quantitative Assessment</td>
<td>Mark F. Randolph and David J. White, Centre for Offshore Foundation Systems, University of Western Australia</td>
</tr>
<tr>
<td>OTC 19130</td>
<td>Oriented Perforating as a Sand Prevention Measure—Case Studies from a Decade of Field Experience Validating the Method Offshore Norway</td>
<td>J. S. Andrews, SPE, H. Jøranson, SPE, and A. M. Raen, SPE, Statoilhydro</td>
</tr>
<tr>
<td>OTC 19139</td>
<td>Managing Flow Assurance and Operation Risks in Subsea Tie-Back System</td>
<td>Shanhong Song, Chevron International Exploration &amp; Production</td>
</tr>
<tr>
<td>OTC 19140</td>
<td>Oil Well Transient Testing by Injection of Miscible Liquid</td>
<td>J.J. Voelker, SPE, Chevron Corp</td>
</tr>
<tr>
<td>OTC 19149</td>
<td>Characterization of Near Seabed Surface Sediment</td>
<td>H. E. Low and M.F. Randolph, Centre for Offshore Foundation System, The University of Western Australia, Australia and C.J. Rutherford, B.B. Bernard and J.M. Brooks, TDI Brooks International, USA</td>
</tr>
<tr>
<td>OTC 19152</td>
<td>Evaluation of PhaseWatcher Multiphase Flow Meter (MPFM) Performance in Sour Environments</td>
<td>Mohammed N. Al-Khamis and Abdulaziz F. Al-Bassam, Saudi Aramco; Zaki Bakhteyar and Muhammad N. Aftab, Schlumberger</td>
</tr>
<tr>
<td>OTC 19154</td>
<td>Application of Paraffin Inhibitor Treatment Programs in Offshore Developments</td>
<td>David W. Jennings, SPE, and Michael E. Newberry, SPE, Baker Petrolite</td>
</tr>
<tr>
<td>OTC 19159</td>
<td>Steering Response for Directional Wells in Soft Formations in Deep Water Developments</td>
<td>Runar Nygaard, Missouri University of Science &amp; Technology; Robin Hartmann, Shell Norge A/S; Geir Hareland, University of Calgary; and Svein Hellvik, AGR Group ASA</td>
</tr>
<tr>
<td>OTC 19160</td>
<td>Design Challenges Due to Wax on a Fast-Track Deepwater Project</td>
<td>Amir Alwazzan, SPE, Mark Utgard, SPE, AMEC Paragon, Inc., and Dalmo Barros, Petrobras America Inc.</td>
</tr>
<tr>
<td>OTC 19161</td>
<td>Tests with a Flexible Quasi-Fairing to Reduce Riser Drag, Suppress VIV and Limit Drilling Down-Time</td>
<td>Andrew J Brown, Allbrown Universal Components Ltd, UK; and Roger King, RKconsulting, UK</td>
</tr>
<tr>
<td>OTC 19163</td>
<td>Toward Low Costs for High Cost Resources</td>
<td>David Bairrington, Conoco Phillips; Brad Bodwell, CRA International; Jim Farnsworth, Cobalt International Energy; Tim Parker, Highmount Exploration &amp; Production, LLC; Chuck Pierce, Chevron International Exploration; and Chris Ross, CRA International Inc.</td>
</tr>
<tr>
<td>OTC 19166</td>
<td>Flow Assurance in 30&quot; But Sub-Sea Pipeline Without the Usage of PPD</td>
<td>Jitendra Prasad, Vinod Sharma, PC Philip, SR Nimoria, and PK Verma Oil and Natural Gas Corporation Ltd, India</td>
</tr>
<tr>
<td>OTC 19170</td>
<td>A System Level Approach to Subsea Hydraulic Control Line Reliability Issues</td>
<td>S.T. Ellis, SPE, G. Siappas, SPE, and A. Colyer, SPE, Chevron; R. Mitchell, SPE, Halliburton</td>
</tr>
</tbody>
</table>
Table of Contents continued

OTC 19172  Case Histories of Improved Horizontal Well Cleanup and Sweep Efficiency With Nozzle-Based Inflow Control Devices in Sandstone and Carbonate Reservoirs  

OTC 19173  Submarine Debris Flow Impact on Pipelines: Drag Forces, Mitigation, and Control  
Arash Zakeri, Kaare Hoeg, and Farrokh Nadim, University of Oslo (UiO)/International Centre for Geohazards (ICG)

OTC 19185  A Generic Model for the Prediction of Sand Production in Oil and Gas Well Systems  
Kingsley E. Abhulimen (PhD), SPE, Chemical and Petroleum Engineering, University of Lagos

OTC 19188  Reservoir Characterization through Joint Interpretation of EM, Seismic and Well Log Data  
Lucy MacGregor, OHM Ltd; Peter Harris, Rock Solid Images A/S; Joel Walls, Rock Solid Images Inc.

OTC 19190  A CFD-Based Model to Locate Flow Restriction Induced Hydrate Deposition in Pipelines  
Esam Jassim and M.A. Abdi, SPE, Centre For Marine CNG Inc., and Y. Muzychka, Memorial University of Newfoundland

OTC 19192  Improvement of Fatigue Life of SCR and OOL in West Africa  
Daniel Bertaso, Graham Hutt, Jue Wang and Paul Tews; Acergy SA

OTC 19193  Characterization of Soft Deepwater West Africa Clays: SHANSEP Testing is Not Recommended for Sensitive Structured Clays  

OTC 19197  Development of the End Fitting Tensile Wires Fatigue Analysis Model: Sample Tests and Validation in an Unbonded Flexible Pipe  
Yijun Shen, Frank Ma, Zhimin Tan, and Terry Sheldrake, Wellstream International Limited, U.K.

OTC 19198  Polyester Moorings — Is Insert Recovery & Testing The Best Way To Determine Rope Integrity?  
Ray Ayers, PhD, P.E./Stress Engineering Services and Nick O’Hear/ TTI, Ltd.

OTC 19202  Developing a Monitoring and Verification Plan with Reference to the Australian Otway CO₂ Pilot Project  
Kevin Dodds, SPE, CO2CRC, CSIRO; and Sandeep Sharma SPE, CO2CRC, Schlumberger

OTC 19207  DW RUPE: A New Deepwater Pipeline Repair Capability for the Gulf of Mexico and Other Deepwater Regions  
Ray Ayers, PhD, P.E., Steve, Hoysan, PhD, P.E., Armando Rebello, P.E., Eric Gage, P.E., Stress Engineering Services, Mike Stark, Enterprise Products Partners, L.P.

OTC 19210  Understanding the Impact of Completion Brine Packer Fluids on Cracking Susceptibility of CRA Materials for Deepwater Applications  
Paul H. Javora, Mingjie Ke, and Richard Stevens & Qi Qu, BJ Services Company

OTC 19213  Real-Time Completion Monitoring Estimates Production Impairment With Acoustic Waves  
Andrey Bakulin, Shell International E & P; Alexander Sidorov, Boris Kashtan, St. Petersburg State University; Mikko Jaaskelainen, Shell International E & P

OTC 19217  ACG Offshore Platforms Temporary Pin-Pile Foundations  
Neil Kitney, BP Exploration Operating Co. Ltd; and Allan Penman, BP Exploration (Caspian Sea) Ltd.
Table of Contents continued

OTC 19218  ACG Jackets Design and Fabrication
Richard T. Ciezarek, Kellogg Brown and Root Energy and Chemicals; Archie M. Cormack and Allan D. Penman, BP Exploration (Caspian Sea) Ltd; Richard Mackie, BOS Shelf; and Geoff Tate, Kellogg Brown & Root Overseas Operations Ltd.

OTC 19226  Panel Presentation: Managing Risk in the Offshore Industry in the New Millenium
Buford Boyd Pollett, Licensed Texas Attorney and Professional Geoscientist

OTC 19227  Topsides and Jacket Modelling for Floatover Installation Design

OTC 19228  Development of a High-Fatigue-Life Spoolable Connector for Offshore Applications
Asif Ehtesham, Joseph Hriscu, and Allan Zhong, Halliburton

OTC 19229  Guidance for Licensing CO2 Storage Operations World Wide
Heleen Groenenberg1 (Energy research Foundation of the Netherlands) Mike Carpenter, Todd Flach (Det Norske Veritas) Kim Zink-Jærgensen (Noreco) Peter Schröder (GEUS) Brendan Beck (IEA Greenhouse Gas Programme) Nils-Peter Christensen (Vattenfall A/S) Andy Chatwick (British Geological Survey) Marc Lescanne, Nicolas Aimard (Total)

OTC 19230  Float-Over of Arthit PP Deck
A. Kocaman and DJ Kim, J. Ray McDermott Engineering LLC, Houston, Texas; Seto Jian, J. Ray McDermott, Singapore

OTC 19233  Emergency Response Training Using Simulators
Brian Veitch, Ocean Engineering Research Centre, Memorial University; Randy Billard and Anthony Patterson, Virtual Marine Technology Incorporated

OTC 19234  Capillary Pressure Measurement in Petroleum Reservoir Cores with MRI
Prisciliano F. de J. Cano Barrita, CIIDIR IPN Oaxaca, MRI Centre University of New Brunswick; Bruce J. Balcom, and Michael J. McAloon, MRI Centre, Physics Department, University of New Brunswick; Derrick P. Green and Josh Dick, Green Imaging Technologies

OTC 19235  ACG Programme – Performance Enabled Through a Production Line of Standardised Concepts and Components Delivered at Scale
Bruce Luberski, Neil Shaw, Mike Brown, Adrian Luckins, and Greg Withers, BP Exploration (Caspian Sea) Ltd.

OTC 19236  ACG Topsides Design and Fabrication
Carroll Kearney Jr., SPE, and Mike James, BP Exploration (Caspian Sea) Ltd; Tim Nethercott, Kellogg Brown and Root Energy and Chemicals; and Geoff Tate, Kellogg Brown and Root Overseas Operations Ltd.

OTC 19237  Caspian Challenge for Marine Installation
Frank Wilson and Alex Munro-Kidd, BP Exploration (Caspian Sea) Ltd.

OTC 19238  ACG Phase 3 Subsea Water Injection Scheme
Adrian Richmond and Peter Barralet, BP Exploration (Caspian Sea) Ltd
Table of Contents continued

OTC 19239  Innovative Pipe System for Offshore LNG Transfer  

OTC 19241  Geology of Marine Gas Hydrates and Their Global Distribution  

OTC 19242  An Evaluation of Perforating Techniques and Use of Caesium Formate Kill Pills to Maximise Productivity in HPHT Gas Wells and Minimise HSE Risks  
Alistair Roy, Allan Twynam, and Jeff Parke, BP; Angus Morrison, Schlumberger; and John Downs, SPE, Cabot

OTC 19244  Multi-Phase Flow and Trapping of CO₂ in Saline Aquifers  
Sally M. Benson, SPE, Stanford University

OTC 19247  Developing Hydrate Monitoring and Early Warning Systems  
B. Tohidi, SPE, A. Chapoy, J. Yang, F. Ahmadloo, I. Valko, Heriot-Watt University, Z. Zain, Petronas

OTC 19249  Influence of Fatigue Issues on the Design of SCRs for Deepwater Offshore Brazil  
Ana Lúcia Fernandes Lima Torres, Marcio Martins Mourelle, Stael Ferreira Senra, Enrique Casaprima Gonzalez, Jose Mauricio Teixeira da Gama Lima - PETROBRAS S.A.

OTC 19250  Flexible Pipe Design Optimization for West Africa Deepwater: Agbami Production Riser Case Study  
E. Sas, J.M. Péré and P. Savy, Technip, and A. Omar, Chevron Energy Technology Company

OTC 19251  Fatigue Life Assessment of a Drilling Riser Containing Corrosion Pits  

OTC 19254  An Overview of the Roncador Field Development, a Case in Petrobras Deep Water Production  
E. Bordieri, V.C.Barbosa, and R.Dias, Petrobras

OTC 19257  The Application of Similarity and Repeatability Premises in a FPSO Conversion  

OTC 19258  A General Overview of a Great Project Built in Brazil  

OTC 19259  New Waves in the Gulf of Mexico  
Russ Ford, Shell; Darrell Hollek, Anadarko; Chris Oynes, MMS; Brian Smith, Chevron; Sandeep Khurana, Devon; Tom Miller, Chevron

OTC 19260  Ultrasonic Wave Velocities Associated with Formation and Dissociation of Methane Hydrate in Artificial Sandy Sediment  

OTC 19261  Flowline and Riser: Soil Interaction in Plastic Clays  
Hédi Dendani, Total France and Christophe Jaeck, Cathie Associates

OTC 19262  How Subsea Processing Impacts Flow Assurance and Field Architecture in Ultra Deepwater  
J.F. Saint-Marcoux, ASME and T. Fontfreyde, Acergy
Table of Contents continued

OTC 19267  Preparing the Way for Future Offshore LNG Marine Terminals
Phillip J.C. COX, Technip France

OTC 19269  Compressed Air Breathing Apparatus for Helicopter Evacuation
P.N.A. Gibbs, Survival Systems Training

OTC 19270  Small Field Development—Offshore Newfoundland and Labrador, Canada
Dave Hawkins, Graham Dillabough, Max Ruelokke and Fred Way/ Canada-Newfoundland and Labrador Offshore Petroleum Board

OTC 19271  Produced Water Discharge Monitoring
T. Husain, B. Veitch, K. Hawboldt, H. Niu, S. Adams, and J. Shanaa, Memorial University of Newfoundland

OTC 19272  Protection and Risk Mitigation Strategies for Subsea Infrastructure in Ice Environments
Charles Randell, C-CORE; Vincent Morgan, C-CORE; and Freeman Ralph, C-CORE

OTC 19273  The Offshore Petroleum Industry in Atlantic Canada – A Regional Overview
R.P. Barnes/Canadian Association of Petroleum Producers

OTC 19274  Development of Subsea Facilities in the Roncador Field (P-52)
José Maurício T. G. Lima, Mariele Lima Kuppens, Paulo Ferreira da Silveira, and Pedro Felipe K. Stock, Petrobras

OTC 19275  Ice Management for Ice Offshore Operations
A.J. Keinonen, AKAC Inc

OTC 19277  Mechanical Properties of Natural Gas Hydrate Bearing Sediments Retrieved from Eastern Nankai Trough
Akira Masui, Kuniyuki Miyazaki, Hironori Haneda, Yuji Ogata, and Kazuo Aoki, AIST

OTC 19280  Measured Swabbing Pressures and Implications for Shallow Gas Blow-Out
Stella Kortekaas and Joek Peuchen, Fugro

OTC 19282  Improved Construction Method for Modern Drill Ships
K.H. You, S.H. Jeong, and P.K. Das, Samsung Heavy Industries

OTC 19283  Field Scale Simulation for Consolidation and Gas Production Behavior during Depressurization Process of Methane Hydrate in Marine Sediments
Y. Sakamoto, Methane Hydrate Research Laboratory, National Institute of Advanced Industrial Science and Technology (AIST), Japan; M. Shimokawara and K. Ohga, Graduate School of Engineering, Hokkaido University, Japan; and K. Miyazaki, N. Tenma, T. Komai, K. Aoki, and T. Yamaguchi, Methane Hydrate Research Laboratory, National Institute of Advanced Industrial Science and Technology (AIST), Japan

OTC 19284  Estimation of the In-Situ Permeabilities of Nankai Trough Hydrate Bearing Sediments from Pressure Temperature Core Samplar (PTCS) Core Measurements
K. Suzuki, T. Ebinuma and H. Naita, Methane Hydrate Research Laboratory/National Institute of Advanced Industrial Science and Technology (AIST)

OTC 19286  Real-Time Casing Annulus Pressure Monitoring in a Subsea HPHT Exploration Well
Neil Sultan, Jean-Baptiste Faget, Mikkel Fjeldheim, and Jean-Claude Sinet, Total E&P Norge AS

OTC 19289  Effectiveness of Polyethylene Helical Strakes in Suppressing VIV Responses After Sustaining High Roller Load Deformation During S-Lay Installation
Rafik Boubenider, Ph.D., P.E., Stress Engineering Services, Inc.; Kaya Alptunaer, Eni Petroleum; Paul Fourchy, Murphy Exploration & Production; and Jaap J. de Wilde, Marin
Table of Contents continued

OTC 19290 Design and Testing Out of Deepwater Seabed Sampler
Tom Lunne, NGI; Tor Inge Tjelta, StatoilHydro; Axel Walta, ApvandenBerg; and Andy Barwise, GardinleinLankelma

OTC 19291 Challenges of Flow Assurance in the Roncador Field
G. Noe, R.F. Nascimento, S.G. Silva, and F.H.F. Rodrigues, Petrobras

OTC 19295 On the Use of EM Technology in the Exploration Decision Making Process
J. Mohr, Aker Exploration ASA; C. Guargena, Aker Exploration ASA; W. Svellingen, Aker Exploration ASA; and S. Sørensen, Aker Exploration ASA

OTC 19296 Roncador Field Development: Reservoir Aspects and Well Development Strategy
L. Cysne, M. K. Mihaguti, Petrobras

OTC 19297 Selecting Seal Materials for Deepwater Completions
Jim Goodson, Baker Oil Tools

OTC 19298 Enhanced Fatigue Methodologies for Flexible Risers and Applications for Brazilian Offshore Conditions
O. Sertâ, B. O’Keeffe, C. Takeda, MCS; and C. A. D. Lemos, and A. G. Vaillant, Petrobras

OTC 19300 Arthit Field Development: Float-over Hardware Design and Issues
B. Tan, S Sahasrabudhe, J.A. Haney, B Leow, J. Ray McDermott Engineering LLC, Houston, Texas

OTC 19302 Downhole Tool Design Challenges for Deepwater Highly Deviated Wells
Matt Howell, Michael (Rick) Johnson, and Grant Roscoe, Halliburton

OTC 19303 Soil Response and Stiffness Laboratory Measurements of SCR Pipe/Soil Interaction

OTC 19305 Relation between Permeability and Pore-Size Distribution of Methane-Hydrate-Bearing Sediments
H. Minagawa, Y. Nishikawa, I. Ikeda, K. Miyazaki, N. Takahara, Y. Sakamoto, T. Komai, and H. Narita, Methane Hydrate Research Laboratory, National Institute of Advanced Industrial Science and Technology (AIST), Japan

OTC 19306 Update on LNG Facility Construction
Tom Phalen and Jim Scott, Fluor Corporation

OTC 19307 Drilling through Bitumen in the Gulf of Mexico: the Shallower vs. the Deeper
Gang Han, Keith Hunter, Jerry Osmond, Jamie Ressler, and Mike Zambonini, SPE, Hess Corporation

OTC 19309 A General Method for Calculating Subsurface CO₂ Storage Capacity
L.G.H. (Bert) van der Meer, SPE, and P.J.P. (Paul) Egberts, TNO Built Environment and Geosciences

OTC 19310 Resource Assessment of Methane Hydrate in the Eastern Nankai Trough, Japan

OTC 19311 Extraction of Methane Hydrate Concentrated Zone for Resource Assessment in the Eastern Nankai Trough, Japan
T. Saeki, T. Fuji, T. Inamori, T. Kobayashi, M. Hayashi, S. Nagakubo, O. Takano, Japan Oil, Gas and Metals National Corporation (JOGMEC)
Table of Contents continued

OTC 19313 Kuwait Oil Company Employs a Systematic Approach to Ensure Successful Underbalanced Drilling Project: A Case Study
Mir Kabir, SPE, Essam Saloussy, SPE, Salem Al-Sabea, KOC; Anil Ambastha, Chevron; Hani Qutob, SPE, Said Boutalbi, SPE, and Jaime Villatoro; SPE, Weatherford International

OTC 19315 Deepwater Moorings with High Stiffness Polyester and PEN Fiber Ropes

OTC 19316 Modeling Overburden Stress Change Due to Compaction of Stacked Reservoirs and Application of Model Results in 4D-Seismic and Infill Drilling
C.O.H. Hindniks, P.M. Schutjens, C.L. Collins and J. van der Horst, Shell E&P Company

OTC 19319 Geohazard Assessment and Avoidance on the GAZA Marine Subsea Development

OTC 19320 Shale Inhibition Strategies for Reservoirs Containing Reactive Clay - Experiences Drilling High Angle Wells in Bohai Bay
Jim McRae, David Bump, and Ed Van Dike, Kerr McGee China; Glenn Phillips, Catalin Aldea, and Mark Dick, M-I SWACO

OTC 19324 Laboratory Study of Hydraulic Fracturing Behavior in Unconsolidated Sands for Methane Hydrate Production
T. Ito, SPE, A. Igarashi, SPE, Institute of Fluid Science, Tohoku University; K. Suzuki, National Institute of Advanced Industrial Science and Technology (AIST); S. Nagakubo, M. Matsuzawa, SPE, Japan Drilling Co., Ltd. (JDC) and K. Yamamoto, SPE, Japan Oil, Gas and Metals National Corporation (JOGMEC)

OTC 19326 Thermodynamic Conditions and Kinetics of Integrated Methane Recovery and Carbon Dioxide Sequestratation
J. Yang, A. Chapoy, B. Tohidi, SPE, Heriot-Watt University; P.S. Jadhawar, SPE, University of Adelaide; J. Lee, SPE, D.G. Huh, SPE, Korea Institute of Geoscience & Mineral Resources

OTC 19328 Functional Verification of the Worlds First Full Field Subsea Separation System – TIORA
Gro Mognseth, FMC Technologies

OTC 19329 Strain Criteria for Deep Water Pipe Laying Operations
Dominique Perinet, Acergy France and Ian Frazer, Acergy UK

OTC 19331 A New Technique for the Development and Quality Control of Flow-Optimized Shaped Charges
M.R.G. Bell, SPE, J. Hardesty, SPE, and N.G. Clark, SPE, GEODynamics Inc.

OTC 19332 Mechanisms by Which Methane Gas and Methane Hydrate Coexist In Ocean Sediments
Javad Behseresht, Yao Peng, Maša Prodanovi, Steven L. Bryant, The University of Texas at Austin, Antone K. Jain and Ruben Juanes, Massachusetts Institute of Technology

OTC 19334 Extending the Use of Conventional Construction Technology for the Installation of Subsea Production Facilities in Deep Water
O. Vennemann, I. Frazer, Acergy M.S. Ltd; and R. Törmqvist, DNV

OTC 19336 The Roncador P-52 Oil Export System - Hybrid Riser at a 1800m Water Depth
F. E. Roveri, A. G. Velten Filho, V. C. Mello and L. F. Marques, Petrobras

OTC 19337 Marine Support to Offshore LNG Terminals
J.Y. Gourmelon, Tidewater Marine
Table of Contents continued

OTC 19339  Trends and Technologies in LNG Carriers and Offshore LNG Facilities  
YoungMan Lee, Tai-Ik Cho, JungHan Lee, Oh-Yig. Kwon, Daewoo Shipbuilding & Marine Engineering Co., Ltd.

OTC 19341  Expandable Screens: Optimized Horizontal Gas Production Through Collaboration  
Alejandro Lopez Lara, Juan Aguirre Montalvo, Adrian Salas Zapata, PEMEX; Eddie G. Bowen, Gonzalo Garcia, Baker Oil Tools

OTC 19343  Arctic Offshore Projects and Technologies: Alaskan Beaufort Sea Exploration and Production Islands — Civil Design and Construction  
J.C. Lucas, Sandwell (Alberta); D.M. Masterson, Chevron Canada Resources; J.D. Hall, Pioneer Natural Resources Alaska; C.J. Perry, Perry Group

OTC 19347  Leak Detection in Subsea Pipeline: A Mechanistic Modeling Approach with Fixed Pressure Boundaries  
R. N. Gajbhiye and S. I. Kam, Craft and Hawkins Department of Petroleum Engineering, Louisiana State University

OTC 19348  Geophysical and Visual Identification of Chemosynthetic and Non-Chemosynthetic Communities Near Perdido Canyon, Northwest Gulf of Mexico  
Thomas W. Neurauter/Geoscience Earth & Marine Services, Inc., R. Craig Shipp, and J. Larry Gibson, Shell International Exploration and Production Inc.

OTC 19349  Site Characterization through the Integration of Geophysical and Geotechnical Data  
C.J. Ehlers and G.M. Lobley, Chevron Energy Technology Company; D.R. Spikula and J.R. Brand, Geoscience Earth & Marine Services Inc.

OTC 19350  Feasibility Assessment of a Mid-Water Transfer System  
R. A. Alvim, 2H Offshore; and P. Elman, 2H Offshore

OTC 19352  Seabed Imagery and Chemosynthetic Communities: Examples From Deep Offshore West Africa  
Eric Cauquil, Jerome Adamy, Total

OTC 19353  Oooguruk Offshore Arctc Flowline Design and Construction  
Glenn A. Lanan, Todd G. Cowin, INTEC Engineering; Beez Hazen, Northern Engineering & Scientific; David H. Maguire, Northern Construction Engineering; J.D. Hall, Pioneer Natural Resources Alaska; and Conrad Perry, Perry Group

OTC 19354  Challenges to Delivering Tomorrow’s Energy — Achieving a Balance between Energy Security and Climate Security  
Ann Oglesby, ConocoPhillips; Robert Fryklund, IHS Energy; and Shawn Huang, ConocoPhillips

OTC 19355  Developing a Better Bio-Geology Overview and Information Needs for Effective Assessment of the Environmental Risks of Deepwater Oil and Gas Development  
Robert S. Carney, Department of Oceanography and Coastal Sciences, Louisiana State University

OTC 19356  Integrated Site Investigation of Seafloor Features and Associated Fauna, Shenzi Field, Deepwater Gulf of Mexico  
Table of Contents continued

OTC 19358  AUV and ROV Data Integration to Predict Environmentally Sensitive Biological Communities in Deep-water

OTC 19359  Specialized AC Drilling Rig for Arctic Offshore Drilling Applications
J.R. Neason, Nabors Alaska Drilling

OTC 19360  Geological and Biological Relationships in the Puma Appraisal Area: from Salt Diapirism to Chemosynthetic Communities

OTC 19364  Coupled Soil Deformation-Flow-Thermal Analysis of Methane Production in Layered Methane Hydrate Soils
M.Y.A. Ng, University of Cambridge; A. Klar, Technion - Israel Institute of Technology; and K. Soga, University of Cambridge

OTC 19365  Surge Pressure Analysis for Bijupira and Salema Water Injection System
Patricia Meliande, Elson A. Nascimento, Universidade Federal Fluminense Civil Engineering Department; João P. Dandoulakis, SHELL Brazil; André L. L. Massa, Universidade Federal do Rio de Janeiro Oceanografic Department

OTC 19366  Effects of Startup and Shutdown of HPHT Wells on Wellbore Hydraulic Control-Line Design
C.T. Zhao, SPE, Technip, and P.K. Notz, SPE, Technip

OTC 19367  Structural Design Overview of the Drillship
Yu-Chang Lim, Hae-Am Moon, Jin-Tae Kim, Jong-Koo Kim, Daewoo Shipbuilding Marine Engineering Inc.

OTC 19369  Coastal Engineering Design of the Oooguruk Project
Craig B. Leidersdorf, Peter E. Gadd, and Gregory E. Hearon, Coastal Frontiers Corporation; J.D. Hall, Pioneer Natural Resources USA; Conrad J. Perry, Perry Group

OTC 19372  Investigation into the Limit State Design of XHPHT PIP Flowlines using Local and Global Finite Element Analysis Methods
Paul Jukes, Jason Sun, and Ayman Eltaher, J P Kenny, Inc.

OTC 19373  Fairings versus Helical Strakes for Suppression of Vortex-Induced Vibration: Technical Comparisons
Don W. Allen, Li Lee, and Dean L. Henning, Shell Global Solutions (US) Inc.

OTC 19374  Fairings versus Helical Strakes for Suppression of Vortex-Induced Vibration: Installation, Maintenance, and Economic Considerations
Don W. Allen/Shell Global Solutions (US) Inc. and C. Wayne Allen/Consultant

OTC 19376  Dissociation Rate Analysis from Methane Hydrate-bearing Core Samples by Using Depressurization or Depressurization with Well-wall Heating Method
Hiroyuki OYAMA, Takao EBINUMA, Jiro NAGAO, Kiyoifumi SUZUKI and Hideo NARITA / Metahne Hydrate Research Laboratory, National Institute of Advanced Industrial Science and Technology (AIST) Yoshihiro KONNO, Yoshihiro MASUDA / University of Tokyo

OTC 19377  Comparisons of Various Fairing Geometries for Vortex Suppression at High Reynolds Numbers
Don W. Allen and Dean L. Henning, Shell Global Solutions (US) Inc.
**Table of Contents continued**

<table>
<thead>
<tr>
<th>Paper Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC 19382</td>
<td>Prediction of Gas Productivity from Eastern Nankai Trough Methane-Hydrate Reservoirs</td>
<td>Masanori Kurihara, SPE, Akihiko Sato, Hisanao Ouchi, Japan Oil Engineering Company; Hideo Narita, National Institute of Advanced Industrial Science and Technology; Yoshihiro Masuda, SPE, the University of Tokyo; Tatsuo Saeki and Tetsuya Fuji, Japan Oil, Gas and Metals National Corporation</td>
</tr>
<tr>
<td>OTC 19383</td>
<td>Focused Seismic Monitoring (FSM) on the Snorre Field</td>
<td>Mark Thompson, Mona Andersen, Ottar Lyse/StatoilHydro</td>
</tr>
<tr>
<td>OTC 19386</td>
<td>Fatigue Design of Flexible Risers with a Non-Dry Annulus</td>
<td>Russell J. Smith (MCS), Virgiliu Stoica (MCS) and Patrick J. O’Brien (MCS)</td>
</tr>
<tr>
<td>OTC 19389</td>
<td>The Pipe Separator: Simulations and Experimental Results</td>
<td>Svein Ivar Sagatun, Per Gramme, Gunnar Hannibal Lie, StatOilHydro, Olav Johan Horgen, Marit Storvik, Torbjørn Ruud, FMC Technologies</td>
</tr>
<tr>
<td>OTC 19391</td>
<td>Fibre Optic Reservoir Monitoring: Field Trials and Results</td>
<td>Jan Langhammer, Hilde Nakstad, Morten Eriksen, Arne Berg, Erlend Rønnekleiv and Ole Henrik Waagaard/Optoplan, Mark Thompson/StatoilHydro</td>
</tr>
<tr>
<td>OTC 19393</td>
<td>Heavy Production Platform for Offshore LNG Development</td>
<td>J.M. Cholley, P.A. Thomas, G. Lebois, P. Maniere, TECHNIP</td>
</tr>
<tr>
<td>OTC 19396</td>
<td>Lightering the Load (LNG)</td>
<td>Captain Robert DM Gilchrist, FenderCare Marine Ltd</td>
</tr>
<tr>
<td>OTC 19397</td>
<td>Flow Assurance and Optimal Design of Thermal Characteristics in Flexible Pipes</td>
<td>Karsten Gorm Nielsen, Mikael Kristiansen, Erik Bendiksen / NKT Flexibles I/S</td>
</tr>
<tr>
<td>OTC 19399</td>
<td>A Systematic Appraisal of the Thrulife Integrity Management and Life Extension of Deepwater Subsea Systems</td>
<td>Chris Saunders, MCS, Patrick O’Brien, MCS, Tim O’Sullivan, MCS</td>
</tr>
<tr>
<td>OTC 19400</td>
<td>Advancements in Response Prediction Methods for Deep Water Pipe-In-Pipe Flowline Installation</td>
<td>Robert O’Grady (MCS), Henk-Jan Bakkenes (Heerema Marine Contractors), Donogh Lang (MCS), Adrian Connaire (MCS)</td>
</tr>
<tr>
<td>OTC 19405</td>
<td>LNG Trials of a New 16” Flexible Hose Based LNG Transfer System</td>
<td>Guillaume Rombaut, Alain Peigne, Philippe Loisel, Alain Le Cloirec, Fatima Machouat, David Maocac, Gaz de France SA</td>
</tr>
<tr>
<td>OTC 19407</td>
<td>The IOR Research Programme</td>
<td>Astrid Helga Jørgenvåg and Jan Richard Sagli, StatoilHydro ASA</td>
</tr>
</tbody>
</table>
| OTC 19409 | The Future Drilling Scenario  
Steinar Strøm, Mohsen Karimi Balov, Halvor Kjørholt, Rune Gaasø - Statoil, Erlend Vefring – IRIS, Rolf Rommetveit - SINTEF |
| OTC 19411 | Trend Breaking Completions  
Sigurd M. Erlandsen and Svein Omdal, StatoilHydro ASA |
| OTC 19413 | Life and Times of Eddy Zorro: A Review of the 2007 Gulf of Mexico Loop Current Activity  
| OTC 19414 | The Research Path to Determining the Natural Gas Supply Potential of Marine Gas Hydrates  
| OTC 19417 | Field Experience with Chemical Sand Consolidation as a Remedial Sand Control Option  
H.K. Kotlar, A. Moen, SPE, StatoilHydro; T. Haaland, and T. Wood, Champion Technologies |
| OTC 19418 | Technology Contribution to Increased Recovery  
H. Kjørholt, A. H. Jørgenvåg, S. Strøm, StatoilHydro ASA |
| OTC 19421 | Seabed Logging Survey Design Optimization Using Grid Modeling  
E.U. Aasland, J.E. Danielsen, and P.T. Gabrielsen, EMGS ASA |
| OTC 19425 | Fatigue in Deep Water Steel Catenary Risers–A Probabilistic Approach for Assessment of Risk  
Tapan K Sen, Kellogg Brown & Root, UK |
| OTC 19427 | Present and Future Possibilities in Optical Condition Monitoring of Flexible Pipes  
Nick Weppenaar, Mikael Kristiansen, NKT Flexibles I/S |
| OTC 19429 | A Coupled FE-SPH Approach for Simulation of Structural Response to Extreme Wave and Green Water Loading  
J.C. Campbell, R. Vignjevic and M. Patel, School of Engineering, Cranfield University |
| OTC 19432 | Investigation of Riser Seafloor Interaction Using Explicit Finite Element Methods  
Edward Clukey, BP America, Paul Jacob, MMI Engineering Inc., Partha Sharma, Det Norske Veritas (USA) Inc. |
| OTC 19433 | Improvement of Near Wellbore Permeability by Methanol Stimulation in a Methane Hydrate Production Well  
Yoshihiro Masuda, Yoshihiro Konno, Hiroki Iwama, University of Tokyo; Taro Kawamura, National Institute of Advanced Industrial Science and Technology; Masanori Kurihara, Hisanao Ouchi, Japan Oil Engineering Company |
| OTC 19434 | Multidimensional Simulations of Multiphase Flow for Improved Design and Management of Production and Processing Operation  
Harald Laux, Ernst Meese, Sjur Mo, Tor Erling Unander and Stein Tore Johansen, SINTEF, Norway Kris M. Bansal and Thomas J. Danielson, ConocoPhillips, USA Alexandre Goldszal, and Jon Ingar Monsen, TOTAL, Norway |
| OTC 19435 | On the Performance of Class 2 and Class 3 Hydrate Deposits During Co-Production With Conventional Gas  
George J. Moridis, SPE, Matthew T. Reagan, SPE, and Keni Zhang, SPE, Lawrence Berkeley National Laboratory, University of California |
### Table of Contents continued

| OTC 19437 | The Free Standing Flexible Riser: A Novel Riser System for an Optimised Installation Process  
Jeroen Remery, Cristiano Silva, Olivier Mesnage, Technip |
| OTC 19438 | Subsea Umbilical Stability Analysis  
| OTC 19439 | Engineering Considerations for Offshore FSRU LNG Receiving Terminals  
Rong-Tai Ho, Moffatt & Nichol |
| OTC 19441 | Jet Induced Trenching Operations: Mechanisms Involved  
J-F. Vanden Berghe, FUGRO Engineers SA; H. Capart and J. C. C. Su, National Taiwan University |
| OTC 19443 | Managing Fatigue in Deepwater Flexible Risers  
Dorthe de la Cour, Claus Kristensen, and Niels-J. Rishøj Nielsen/NKT Flexibles I/S |
| OTC 19445 | Fiber Optic 4C Seabed Cable for Permanent Reservoir Monitoring  
Steve Maas, Brett Bunn, Petroleum Geo-Services (PGS) |
| OTC 19447 | Sangachal Onshore Terminal Expansion  
Norman Ingram and John Sutcliffe; BP Exploration (Caspian Sea) Ltd. |
| OTC 19450 | Impact of the use of FullQTF on LNGC Moored in Shallow Water Studies  
Cédric BRUN, Flávia REZENDE, Damien COACHE, Johan MOMBERTS (Bureau Veritas) |
| OTC 19451 | Multilateral Wells to Improve Production Performance in Heavy-Oil Reservoirs:  
The Challenges of the ZAM-408ML Well  
D. Baldini, L. Tealdi, F. Okassa, L. Riccobon, D. Isella, A. Baioni, G. Obondoko, H. Malonga,  
F. Itoua Konga, M. Rampoldi, Eni Congo |
| OTC 19454 | Spectral and Cycle-Counting Fatigue Damage Estimation Methods for Steel Catenary Risers  
Exploration and Production Inc. J. P. Vogiatzis – Independent Contractor |
| OTC 19455 | Mature Offshore Fields Rejuvenation via Long Reach Wells and Massive Hydraulic Fracturing:  
The Kitina Case History  
F. Okassa, L. Tealdi, D. Baldini, A. Casero,H.Malonga, D. Isella, A. Baioni, L. Riccobon, G. Obondoko,  
F. Itoua Konga, F. Pounga, M. Rampoldi, Eni Congo |
| OTC 19458 | Numerical Simulation of Methane Hydrate Production from Geologic Formations via Carbon  
Dioxide Injection  
M.D. White, Pacific Northwest National Laboratory; B.P. McGrail, SPE, Pacific Northwest  
National Laboratory |
| OTC 19459 | Evaluation of Landslide Impact on Deepwater Submarine Pipelines  
Exploration, Nat Usher/BP Egypt |
| OTC 19461 | Improved Assessment of Chemosynthetic Community Presence in Areas of Potential Deepwater  
Oil and Gas Development by Modification of Routine Sampling Methods  
J. Gharib, D. McConnell, A. Digby, J. Henderson, and H. Danque, AOA Geophysics; D. Orange,  
Black Gold Energy |
| OTC 19462 | The Motor Jacket: An Innovative System for ESP PCP Efficiency Improvement in  
Heavy-Oil Reservoirs  
F. Okassa, H. Malonga, L. Tealdi, G. Obondoko, and M. Rampoldi, Eni Congo |
**Table of Contents continued**

<table>
<thead>
<tr>
<th>OTC 19465</th>
<th>New Approach to Sand Removal</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>OTC 19467</th>
<th>Kikeh Development: Delivering World Class Completion Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tamara Webb, Kasim Selamat, Jusni Omar, and Rusty Desormeaux, Murphy Sabah Oil Co., Ltd.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19469</th>
<th>Kikeh Development: Challenges in Implementing a Smart Field</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rick Chan, SPE, Bert Terry, SPE, Murphy Sabah Oil Co., Ltd., Dave Dixon, SPE, Fred Gard, SPE, NSI Upstream</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19471</th>
<th>Kikeh Development: Design of the World’s 1st Gravity Actuated Pipe (GAP) Fluid Transfer System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P.A. Brown, E. Rooduin, M Lemoël, Single Buoy Moorings Inc.; and G. Stone, Murphy Sabah Oil Co., Ltd.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19474</th>
<th>A System for Training Operators of Subsea Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>John Friedemann, Kristian Lokken, VetcoGray Scandinavia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19477</th>
<th>A Methodology for Determining Offshore Floating Facilities Kinematics from Accelerometers and GPS Field Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vasileios Gkaras, Himanshu Gupta, Hugh Banon, BP America, Pol Spanos, Lewis B. Ryon Chair of Engineering, Rice University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19480</th>
<th>Seismic Time History Response of the Maleo Producer</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Paul Jacob, MMI Engineering Inc., Bil Stewart, Stewart Technology Associates</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19481</th>
<th>Kikeh Development: Project Overview</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>OTC 19482</th>
<th>Kikeh Development Project Execution Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stephen C. Dechant, Murphy Sabah Oil Co., Ltd</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19484</th>
<th>Kikeh Development: Sand Control Selection, Design and Implementation of ESS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tamara Webb, Jusni Omar, Rusty Desormeaux, Pat Moran, Kasim Selamat, Murphy Sabah Oil Co., Ltd., Steve Beare, Colin Jones, Kevin McWilliam, Weatherford International</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19485</th>
<th>HYDRAFLOW: A Multiphase Cold Flow Technology for Offshore Flow Assurance Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R. Azarinezhad, SPE, A. Chapoy, R. Anderson, SPE, and B. Tohidi, SPE, Heriot-Watt University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19489</th>
<th>Feasibility of Monitoring Gas Hydrate Production with Geophysical Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Michael B. Kowalsky, Seiji Nakagawa, and George J. Moridis, Lawrence Berkeley National Laboratory, University of California</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19492</th>
<th>Technical Challenges and Production Forecast For Subsea Compression System</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Johan Solvik, Rhodri Morgan and Bjørn Øiungen, Det Norske Veritas</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19493</th>
<th>Interaction Model for Steel Compliant Riser on Soft Seabed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C. Aubeny and G. Biscontin, Texas A&amp;M University</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19494</th>
<th>Cyclic Tests of Model Pipe in Kaolin</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>C. Aubeny, Texas A&amp;M University; C. Gaudin and M. Randolph, University Western Australia</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19495</th>
<th>Model Tests for Steel Catenary Riser in Marine Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Thomas Langford, Norwegian Geotechnical Institute; Charles Aubeny, Texas A&amp;M University</td>
</tr>
</tbody>
</table>
## Table of Contents

<table>
<thead>
<tr>
<th>Ref.</th>
<th>Title</th>
<th>Authors &amp; Affiliations</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC 19496</td>
<td>Fluid and Gas Expulsion: Impacts on Seafloor Geology and Biology</td>
<td>Harry H. Roberts, Louisiana State University, and William W. Shedd and Jesse Hunt, Jr., Minerals Management Service</td>
</tr>
<tr>
<td>OTC 19498</td>
<td>A Novel Method for Coiled Tubing Installation</td>
<td>Peter James Simpson, Simon Luffrum / 2H Offshore</td>
</tr>
<tr>
<td>OTC 19504</td>
<td>Solving Pipeline Technology Challenges in the GoM by Innovation, Advanced Analysis Tools, and Engineering Competency</td>
<td>Paul Jukes, James Wang, Billy Duron, J P Kenny, Inc.</td>
</tr>
<tr>
<td>OTC 19505</td>
<td>Two Field Studies Demonstrate That New AA LDHI Chemistry is Effective at High Water Cuts Without Impacting Oil/Water Quality</td>
<td>R. Alapati, J. Lee, and D. Beard, Champion Technologies</td>
</tr>
<tr>
<td>OTC 19513</td>
<td>3D Modeling Improves Deepwater Umbilical Design Dependability</td>
<td>M. Dixon, T. Zhao, Deepsea Engineering &amp; Management Ltd.</td>
</tr>
<tr>
<td>OTC 19514</td>
<td>Predicting When and Where Hydrate Plugs Form in Oil-Dominated Flowlines</td>
<td>John Boxall, Simon Davies, Carolyn Koh, and E. Dendy Sloan. Center for Hydrate Research, Colorado School of Mines</td>
</tr>
<tr>
<td>OTC 19515</td>
<td>Carbon Storage in Deep Sea Sediments: An Important Part of the CCS Portfolio</td>
<td>Daniel P. Schrag, Department of Earth and Planetary Sciences, Harvard University</td>
</tr>
<tr>
<td>OTC 19517</td>
<td>Installation-Driven Field Developments for Deepwater Subsea Projects</td>
<td>Mark Dixon and Easter David, DeepSea Engineering &amp; Management Ltd.</td>
</tr>
<tr>
<td>OTC 19518</td>
<td>Mitigating Flow Assurance Challenges Using Subsea Meters on Independence Hub</td>
<td>Nikhil B. Joshi, Moulinex Business Services, LLC; Bob Buck, Anadarko Petroleum Corporation</td>
</tr>
</tbody>
</table>
OTC 19519 Four Critical Needs to Change the Hydrate Energy Paradigm from Assessment to Production: The 2007 Report to Congress by The U.S. Federal Methane Hydrate Advisory Committee
Dendy Sloan, SPE, Colorado School of Mines; Peter Brewer, Monterey Bay Aquarium Research Institute; Richard Charter Defenders of Wildlife; Nader Dutta, SPE, Schlumberger; Arthur Johnson, Hydrate Energy International; Emrys Jones, SPE, Chevron Petroleum Technology; Kimberly Juenger, World Energy Systems; Miriam Kastner, Scripps Institute; Devinder Mahajan, Brookhaven National Laboratory; Stephen Masutani, University of Hawaii; Robert Swenson, State of Alaska; Jean Whelan, Woods Hole Oceanographic Institute; Scott Wilson, SPE, Ryder Scott Co, L.P.; Robert Woolsey, University of Mississippi

OTC 19521 Offshore Routing of Large Diameter Pipelines through High Relief Outcrops

OTC 19525 Virtual Metering Technology Field Experience Examples
Prashant Haldipur, Ph.D., SPE; Gregory Metcalf, SPE, Multiphase Solutions, Inc.

OTC 19526 Oooguruk Project Field Development Concept and Execution
J. D. Hall, Pioneer Natural Resources Alaska, Inc.; C. J. Perry, Perry Group

OTC 19528 In-Situ Measurement of Pipe-Soil Interaction in Deep Water
A. J. Hill, BP, and H. Jacob, Fugro Engineers SA

OTC 19530 Geomechanics in Integrated Reservoir Modeling
A. (Tony) Settari, SPE, and Vikram Sen, SPE, University of Calgary

OTC 19531 Compact Electrostatic Separation Process
H. G. Wallace, D. L. Taggart, SPE, D. R. Manen, G. W. Sams, NATCO Research and Development

OTC 19532 Time-Lapse Seismic Modeling and Inversion of CO₂ Saturation for Storage and Enhanced Oil Recovery
M.A. Meadows, Fugro Seismic Imaging

OTC 19534 Analyses and Measurement of Conductor Response for Jack-up Drilled Wells in 110 m Water Depth in Harsh Environment
Morten Bærheim, StatoilHydro, Andrew North, Noble Denton Consultants, Oddrun Steinkjer, DNV

OTC 19535 Modern Deepwater Site Investigation: Getting It Right The First Time
Kerry J. Campbell, Gary D. Humphrey, and Robert L. Little, Fugro GeoConsulting, Inc.

OTC 19536 Permeability of Laboratory-Formed Hydrate-Bearing Sand
Timothy J. Kneafsey/Lawrence Berkeley National Laboratory (LBNL), Yongkoo Seol/LBNL (now at National Energy Technology Laboratory), Arvind Gupta/Colorado School of Mines (now at Shell), Liviu Tomutsa, SPE/LBNL

OTC 19539 Improving Reliability and Reducing Intervention Costs of Ultra-deep Subsea Technology at the Design Stage
Pedram Fanailoo, Goran Andreassen; Det Norske Veritas (DNV) U.S.A, Inc.

OTC 19544 Structural Optimization of Subsea Pressure Vessel Equipment for HPHT Application with a Design by Analysis Case Study of a Typical BOP
Shafiq Khandoker, Greg Landthrip, and Philip Huff, Hydrii LLC

OTC 19545 Comparison of Jackup Rig Spudcan Penetration Methods in Clay
Table of Contents continued

OTC 19547  All Electric Subsea Tree System
Vidar Sten-Halvorsen – FMC Technologies, Evind Koren - StatoilHydro

OTC 19548  Base Material Considerations and the Selection of NACE Approved High-Strength Alloy Overlay for Use on HP/HT Exploration and Production Equipment
Philip A. Huff, Shafiq Khandoker, Greg Landthrip, Melissa Newbury, Hydril Company LLC

OTC 19550  Overcoming Weight Transfer Challenges in Complex, Shallow, Extended Reach Wells on Alaska’s North Slope
Randy Thomas, Dennis Hartwig, Steve McKeever, ConocoPhillips Alaska, Inc.; Dave Egedahl, ASRC Energy Services E&P Technology, Inc.; John Patton, Keith Holtzman, Halliburton–Sperry Drilling Services; Lee Smith, Halliburton-Security DBS/Alaskan Energy Resources

OTC 19551  The Commercial Advantages and Limitations-Onshore versus Offshore LNG Import Facilities
Hans Kristian Danielsen, Goran Andreassen, Det Norske Veritas

OTC 19552  Well Intervention in Deep Waters
Erling Mathiassen, Per Kristian Munckerud, StatoilHydro; and H. Brian Skeels, FMC Technologies

OTC 19553  Overturning Analysis of Maleo Jack-Up Mat Foundation on Soft Clay
J.D. Murff, Texas A&M University; and A.G. Young, Geoscience Earth & Marine Services, Inc.

OTC 19554  Sensitivity Analysis of Gas Production from Class 2 and Class 3 Hydrate Deposits
Matthew T. Reagan, SPE, George J. Moridis, SPE, and Keni Zhang, SPE, Lawrence Berkeley National Laboratory

OTC 19559  Mechanical Strength and Seismic Property Measurements of Hydrate-Bearing Sediments (HBS) During Hydrate Formation and Loading Tests
Seiji Nakagawa, Timothy J. Kneafsey, and George J. Moridis, SPE, Lawrence Berkeley National Laboratory

OTC 19561  A New Experimental Study on the Spreading of Liquid Nitrogen over Water
H.K. Kytömaa, M.K. Chernovsky, and F.Gavelli, Exponent, Inc.

OTC 19563  Geohazard Challenges of the Woodside OceanWay Secure Energy LNG Development, Offshore Southern California
P. Hogan, Fugro West; A. Lane, Woodside; J. Hooper, Fugro GeoConsulting; A. Broughton, Fugro West; and B. Romans, Stanford University

OTC 19565  Monitoring of Floating Offshore Installations’ Wave Frequency Motions
Pierre Liagre, Himanshu Gupta, and Hugh Banon, BP America Production Company

OTC 19566  Paraffin Cleanout in a Single Subsea Flowline Environment: Glycol to Blame?
J.Claire Bailey, Anadarko Petroleum Corporation; and Stephan J. Allenson, Nalco Company

OTC 19568  Use of Analytical Models and Monte-Carlo Simulation for Quantification of Uncertainties Associated with Gas Production from Hydrate-Capped Gas Reservoirs
Mehran Pooladi-Darvish, SPE, University of Calgary and Fekete Associates Inc.; and Shahab Gerami, SPE, National Iranian Oil Company

OTC 19569  Comparison of Axial Pile Capacities in Clay at Offshore Sites Investigated by both “Early” and “Recent” Sampling Techniques
G.W. Quirós, Consultant; J.G. Aramburu and Patricia M. Peters, Fugro-McClelland Marine Geosciences, Inc.
### Table of Contents continued

<table>
<thead>
<tr>
<th>Paper Number</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>OTC 19572</td>
<td>Coupled Hydrological, Thermal and Geomechanical Analysis of Wellbore Stability in Hydrate-Bearing Sediments</td>
<td>Jonny Rutqvist, Lawrence Berkeley National laboratory; Tarun Grover, Texas A&amp;M University; and George J. Moridis, SPE, Lawrence Berkeley National Laboratory</td>
</tr>
<tr>
<td>OTC 19573</td>
<td>Experimental Modeling of the Unburial Behaviour of Pipelines</td>
<td>B.W. Byrne, J. Schupp, C.M. Martin, University of Oxford; J. Oliphant, A. Maconochie, Technip; and D.N. Cathie, Cathie Technology Associates</td>
</tr>
<tr>
<td>OTC 19575</td>
<td>Thinking About Risk in the Offshore Energy Industry</td>
<td>Scot W. Anderson, Davis Graham &amp; Stubbs LLP</td>
</tr>
<tr>
<td>OTC 19576</td>
<td>Gulf of Mexico Offshore Platforms-Risk Engineering</td>
<td>T. T. “Tommy” Laurendine, P.E., Liberty International Underwriters (Member of Liberty Mutual Group)</td>
</tr>
<tr>
<td>OTC 19580</td>
<td>Detailed Geotechnical Investigation Around In-Place Mat Foundation Including T-Bar and Cpt Comparisons</td>
<td>Jean M.E. Audibert, Quest Geo-Technics, Steve Neubecker, Advanced Geomechanics and Stewart, W.P., Stewart Technology Associates</td>
</tr>
<tr>
<td>OTC 19581</td>
<td>The Maleo MOPU Project—Project Overview and Keynote Address</td>
<td>Mike Ooley, Global Process Systems, William P. Stewart, Stewart Technology Associates</td>
</tr>
<tr>
<td>OTC 19583</td>
<td>Seismic Design Criteria for the Maleo Producer, Madura Straits</td>
<td>Ahmed Nisar, MMI Engineering, Inc.</td>
</tr>
<tr>
<td>OTC 19589</td>
<td>Pipe-Soil Interaction During Lateral Buckling and Pipeline Walking — The SAFEBUCK JIP</td>
<td>David A.S. Bruton, AtkinsBoreas; David J. White, University of Western Australia; Malcolm Carr, AtkinsBoreas; Johnny C.Y. Cheuk, University of Hong Kong</td>
</tr>
<tr>
<td>OTC 19596</td>
<td>3D Visualization Technology, Reducing Cycle Time and Improving Performance, from Basin Scale Assessment through Prospect Identification to Optimal Drill Site Selection</td>
<td>Frank R. Love, Principal Regional Geologist, Shell International Exploration and Production and Nicholas Purday, Manager of Geophysics, Landmark/Halliburton</td>
</tr>
<tr>
<td>OTC 19599</td>
<td>Improving Productivity of Hydraulically Fractured Gas Condensate Wells by Chemical Treatment</td>
<td>Vishal Bang, The University of Texas at Austin; Chengwu Yuan, The University of Texas at Austin; Gary A. Pope, The University of Texas at Austin; Mukul M. Sharma, The University of Texas at Austin; Jimmie R. Baran, Jr., 3M; John D. Skildum, 3M; and Harold C. Linnemeyer, The University of Texas at Austin</td>
</tr>
<tr>
<td>OTC 19601</td>
<td>Borehole Pressure Coring and Laboratory Pressure Core Analysis for Gas Hydrate Investigations</td>
<td>P.J. Schulteiss and M.E. Holland, Geotek Ltd.; and G.D. Humphrey, Fugro GeoConsulting, Inc.</td>
</tr>
<tr>
<td>OTC 19602</td>
<td>Development of API RP 2MET: The New Path for Metocean</td>
<td>James Stear, Chevron</td>
</tr>
<tr>
<td>OTC 19603</td>
<td>API RP2T and RP2FPS: Moving Forward</td>
<td>Steve Leverette, SBM Atlantis, and W. R. Wolfram, ExxonMobil Development Company</td>
</tr>
</tbody>
</table>
Table of Contents continued

OTC 19605  ISO 19900 Series: Offshore Structures Standards
R.O. Snell, BP Exploration; and D.J. Wisch, Chevron ETC

OTC 19606  API Offshore Structures Standards: Changing Times
D. J. Wisch, Chevron Energy Technology Company; and Andrea Mangiavacchi, Experia Consulting

OTC 19607  API RP 2SK: Stationkeeping — An Emerging Practice
D.J. Petruska, BP America Production Company, C. Castille, ENI Petroleum, C.A. Colby, Diamond Offshore,
J. Stiff, ABS Consulting, B.A. Stone, WorleyParsons Sea, and D.J. Wisch, Chevron ETC

OTC 19608  ISO Floating and Fixed Standards ISO 19902, ISO 19903, and ISO 19904
D.N. Galbraith, Poseidon Group AS; W.R. Wolfram, ExxonMobil Development Company.; and S. Leivestad,
Standard Norge

OTC 19612  Swellable Packer Technology Resolves Water Production Problem — Case History in Campos Basin, Brazil
Eduardo Midulfo Ueta, José Augusto da Silva Neto, Max Samuel Nunes, Petrobrás; and Oscar Barrios,
André Luiz Rodrigues Tocchetto, Edison Barretto, Halliburton

OTC 19618  The Case Against Severe Cold Eddies
Cortis Cooper and James Stear, Chevron Energy Technology Co.; Sergei Frolov, AEF; Lee Gordon, Doppler Ltd.;
Gus Jeans, Fugro-GEOS; Darryl Symonds, Teledyne; Michael Vogel, Shell International EP

OTC 19620  Case History: New Design in Surface-Controlled Subsurface Safety Valves Resolves Valve Problems in Subsea Completions in the Gulf of Mexico
Gerald LeBoeuf and Shane Adams, Halliburton; Adam Pittman, Shell; and Paul Dodd, S&S Technologists

OTC 19621  Development of a High-Temperature Rechargeable Battery for Downhole Use in the Petroleum Industry
Michael Fripp, SPE, Don Kyle, Syed Hamid, SPE, and Darrell Moore, Halliburton, Josip Caja and T. Don Dunstan,
Electrochemical Systems, Inc.

OTC 19622  Case History: Two GOM Multi-Zone, Frac-Packed, Intelligent Deepwater Completions—How Success was Achieved and the Associated Lessons Learned
Stephen Jeu and Wayne Cunningham, Thunderbyrd Energy Services; Jacques Braile Salies, Petrobras America, Inc.;
Richard Jannise, Brad Beridon, and Brennan Oubre, Halliburton; George Arnold and Colton Puckett, WellDynamics,
Inc.

OTC 19623  New Reservoir Testing and Sampling System Reduces Costs and Provides Improved Real-Time Data Acquisition in Deep Water and Environmentally Sensitive Wells Gulf of Mexico and Brazil Case Histories
Alejandro Salguero, Edgar Almanza, and Henk Kool, Halliburton

OTC 19624  Design and Initial Results of EOR and Flow Assurance Laboratory Fluid Testing for K2 Field Development in the Deepwater Gulf of Mexico
JFrank Lim, Eulalia Munoz, and Brad Browning, Anadarko Petroleum Corporation;
Nikhil Joshi, Moulinex Business Services; Cuong Jackson and Stefan Smuk, Schlumberger

OTC 19626  Performance Qualification of Seal Systems for Deepwater Completions
Buc Slay and Kent Ferrell, Halliburton
<table>
<thead>
<tr>
<th>OTC 19632</th>
<th>Lessons Learned From the Openhole Completions in Two HP/HT Retrograde Gas Condensate Fields Using Expandable Liner Hangers, External-Sleeve Inflatable Packer Collars and Swellable Packers for Zonal Isolation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yong Sook Kim, Kwon Ou Kwang, and Basker Murugappan, Korean National Oil Company (KNOC); James Williford, Tance Jackson, Irwan Nizam and Derek Lim, Halliburton</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19634</th>
<th>Hydrates Blockage Experience in a Deep Water Subsea Dry Gas Pipeline: Lessons Learned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moussa Kane, SPE, Aditya Singh, SPE, and Ronny Hanssen, SPE, TOTAL E&amp;P USA</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19636</th>
<th>LNG Terminal Expansions, Working Successfully within an Operating Plant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dan Tennison, P.E., P.M.P., El Paso Corporation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19637</th>
<th>Kikeh Development: Subsea Equipment Installation Challenges for Malaysia’s First Deepwater Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>G. Murray and D. Lowther, Technip Subsea 7 Asia Pacific; A. Ledingham and T. J. Stensgaard, Murphy Sabah Oil Co., Ltd.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19639</th>
<th>Kikeh Development: Spar Topside Floatover Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Edelson, M. Luo, and J. Halkyard, Technip; D. Smiley, Murphy Sabah Oil Co., Ltd.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19642</th>
<th>The Next Major Challenge for Deep Water: Developing Marginal Fields</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Keith K. Millheim / MEPS LLC</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19644</th>
<th>International Risk Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daniel V. Murphy, President - Systech International, Inc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19645</th>
<th>Time Domain FE Seismic Analysis of Mat-Supported Jack-Up Structure on Soft Clay</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. S. Templeton, Ill, SAGE USA, Inc.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19648</th>
<th>Integration of Solid Modeling into Real Time Navigation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>OTC 19650</th>
<th>Imaging Downed Platforms</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>OTC 19653</th>
<th>Methodology to Establish the Fitness for Continued Service of a Damaged Export Pipeline in 1000 m of Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Raghu, Shell Global Solutions US, Houston, TX, Richard Swanson, RCS Engineering, Houston, TX, Chris Alexander, Stress Engineering Services, Houston, TX</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19656</th>
<th>Solid Expandable Monobore Openhole Liner Extends 13-5/8 in. Casing Shoe without Hole Size Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pat York, Mike Sutherland, David Stephenson, and Lev Ring; Weatherford Int’l.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>OTC 19657</th>
<th>Collaborative Effort Enables Repair of Prolific Gas Well with Solid Expandable Chrome Liner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zdenek Sehnal, StatoilHydro; Robert M. Anderson, BP Azerbaijan; Robert V. Baker, BP America; P. D. Pattillo, SPE, BP America; J. C. Healy, Consultant; Patrick York, Bill Rhinehart, Lev Ring, and Brian Marr, Weatherford International</td>
<td></td>
</tr>
</tbody>
</table>
## Table of Contents continued

| OTC 19659 | Marine Magnetotelluric (MMT) Data Interpretation in the Gulf of Mexico for Subsalt Imaging | S. K. Sandberg, T. Roper, and T. Campbell, WesternGeco Electromagnetics |
| OTC 19662 | Overview of World LNG Industry | Warren R. True, Oil & Gas Journal |
| OTC 19668 | Pipeline Flotation in Liquefiable Soil | David Bonjean, Carl Erbrich, and Jianguo Zhang, Advanced Geomechanics |
| OTC 19669 | Onshore Commissioning of Greater Plutonio FPSO Focused on Offshore Start Up | Matt Forster, BP Angola BV |
| OTC 19672 | Greater Plutonio: Angola Deepwater Project | Jim Campbell, BP Angola BV, Offshore Technology Conference |
| OTC 19673 | Delivering Giant Wells in Angola | C. Graham Stewart, SPE, BP Angola (Block 18) BV |
| OTC 19674 | Greater Plutonio — Progressive Subsurface Management in a High Cost, Subsea Environment | J.L. Peak, SPE, BP Angola (Block 18) BV and D.A. Booth, SPE, BP Angola (Block 18) BV |
| OTC 19675 | The Greater Plutonio FPSO: Mixed Contracting Strategies to Optimize Delivery | G.A. Stewart, BP Angola BV |
| OTC 19676 | Subsea, Umbilicals, Risers and Flowlines (SURF): Performance Management of Large Contracts in an Overheated Market; Risk Management and Learnings | Tony Oldfield, BP Angola BV |
| OTC 19678 | Optimum Optical Architectures for Seismic Reservoir Monitoring | P. Nash, and A. Strudley, Stingray Geophysical |
| OTC 19679 | Development of EPS FPSO and Riser System for Deepwater Gulf of Mexico | J. Chung, and W.A. Dupont, Technip; C.F. Mastrangelo, and B.P. Hartman, Petrobras |
| OTC 19680 | Simian / Sienna Controls Platform Case Study | Mohamed Gaber Abdul Raheim, Mamdouh Farouk, Burullus Gas Company, Wael F. Ellaithy, IPR Group of Companies |
| OTC 19683 | Differences in Shear Strength between Jumbo Piston Core and Conventional Rotary Core Samples | Patrick C. Wong, ExxonMobil Development Company; Brian B. Taylor, Jacques Whitford Ltd.; and Jean M. E. Audibert, Quest Geo-Technics |
| OTC 19686 | Footings Design for Temporarily Founded Seabed Drilling Systems | Pat Kelleher, Nazri Samsuri, Benthic Geotech, Australia, John Carter, The University of Newcastle, Australia |
| OTC 19687 | Quality Assessment of Marine Sediments Recovered with a Hydraulically Tethered Piston Corer | Pat Kelleher, Benthic Geotech, and Tim Hull, GHD Geotechnics |
| OTC 19688 | Design, Fabrication and Installation of the Neptune Export Lateral PLETs | J. K. Antani, Enbridge Offshore Pipelines LLC; W. T. Dick, Enbridge Offshore Pipelines LLC; D. Balch, Pegasus International Inc; T. van der Leij, Allseas USA Inc |
### Table of Contents continued

**OTC 19690**  
Asphaltene Instability Induced by Light Hydrocarbons  
Jefferson L. Creek, SPE, Chevron Energy Technology Company; Jill S. Buckley, SPE, New Mexico Institute of Mining & Technology; Jianxin Wang, SPE, Chevron Energy Technology Company

**OTC 19691**  
Emerging Geophysical Technologies: Is Planting and Re-planting of Nodes in a 4C-4D Scenario the Optimum and Most Cost-Effective Solution for Field Reservoir Monitoring?  

**OTC 19693**  
Monitoring the Oilfield of the Present Using Live-Well Microseismic Technology  
Stephen A. Wilson, Gilles Le Floch, Rob Jones, Schlumberger

**OTC 19694**  
Development of the 18-3/4” - 20,000 psi Subsea Wellhead System for High Pressure and High Temperature Applications  
Shiva Singeetham and Bernard McCoy Jr., FMC Technologies

**OTC 19695**  
Improved EPC Integration Management for FPSOs  

**OTC 19696**  
Collaboration for EPC of Offshore Structures  

**OTC 19699**  
An Alternative Approach to an Offshore Exploration Borehole for Gas Storage Caverns Using a Hybrid of Drilling Technology  
Andy Frazer and Ross Stevens, Fugro Seacore Limited

**OTC 19702**  
Application of Electromagnetic Scanning to an Australian Frontier Basin with Complex Bathymetry  
D.J. Monk, Apache Corporation; F. Roth, EMGS; J. Ross, Apache Energy Ltd; and C. Twarz, EMGS

**OTC 19703**  
High Integrity Pressure Protection Systems (HIPPS) Development for the Gulf of Mexico: Update on Deepstar, API 17O and Industry Developments  
Christopher Curran, BP

**OTC 19704**  
Sandwich Pipes for Ultra Deepwater Applications  
Xavier Castello and Segen F. Estefen, COPPE/UFRJ

**OTC 19705**  
Advancements in Methods for Quantifying Energy Dissipation in Unbonded Flexible Pipe  
Adrian Connaire, Enda O’Sullivan, and Tommie Carr, MCS, and Martyn Witton, Benthonic Consulting

**OTC 19706**  
The Challenges of Deepwater Gas Production Offshore Western Australia  
J.E.P. Morgan, SPE, Schlumberger

**OTC 19707**  
Diverless Maintained Cluster Subsea Architecture—14 Years Experience  
P.M. Roberts, J. White, R.J. Wood, and R.N. Tucker, VerdErg Ltd.

**OTC 19708**  
Developments in Underwater Technology and the Role of the Learned Society  
I Gallett, Society for Underwater Technology

**OTC 19709**  
Installing Disconnectable Turrets and Offloading Buoys  
Brian K. Green, First Subsea Ltd, and Keith McClure, Nexen Petroleum U.K. Limited

**OTC 19710**  
CO₂ Sequestration in the Offshore Environment: Challenges, Opportunities and Solutions  
Joseph M. Reilly, ExxonMobil Upstream Research