

IADC/SPE Asia Pacific Drilling Technology Conference and Exhibition 2021

Online
8 - 9 June 2021

ISBN: 978-1-7138-3144-0

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© (2021) by Society of Petroleum Engineers
All rights reserved.

Printed with permission by Curran Associates, Inc. (2021)

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

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

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

books@spe.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

TECHNICAL SESSION 01: SAFE AND EFFECTIVE WELL DELIVERY THROUGH FLUID AND BARRIER DESIGN

EFFECTS OF WELL CEMENT ADDITIVE PARTICLE SIZE AND DENSITY TOWARDS OVERALL BLEND CHARACTERIZATION	1
<i>Shameed Ashraf, Rahmad Haidzar Muhamad Husin, Fakhuma Ubaidillah Mohd Hafiz</i>	
THE MODIFIED CONFIGURATION OF WET WASH SYSTEM IN THE GULF OF THAILAND	10
<i>Khemchad Sumitra, Marty Fernau, Karn Thanomkiat, Joseph Ritcey, Chadchai Tumtong</i>	
A NEW CATIONIC SHALE INHIBITOR AND WATER BLOCKING AGENT FOR WATER-BASED DRILLING FLUID	16
<i>Mohammed Al-Heed, Mobeen Murtaza, Sayed Hussain, Rahul Gajbiye</i>	
TOWARDS SUSTAINABLE ECONOMIC GROWTH: USE OF BRICK WASTE POWDER IN OIL WELL CEMENT APPLICATIONS	26
<i>Tamanjot Singh Chawla, Abhinav Hazra, R. K Raigar, Kishori Lal</i>	
USE OF MICRONIZED WEIGHTING AGENTS FOR HIGH DENSITY COMPLETION FLUIDS: A CASE STUDY	34
<i>Sufyan Deshmukh, Marcelo Dourado Motta, Sameer Prabhudesai, Mehul Patil, Yogesh Kumar, Blake Anthony Mihalic, Rahul Sukanta Dey</i>	
OBTAINING ZONAL ISOLATION IN GEOTHERMAL WELLS	45
<i>Allam Putra Rachimillah, Cinto Azwar, Ambuj Johri, Ahmed Osman, Eric Tanoto</i>	

TECHNICAL SESSION 04: OPTIMISING WELL DELIVERY THROUGH NOVEL TECHNOLOGIES AND PROCESSES

HYBRID BIT TECHNOLOGY DEPLOYMENT YIELDS BREAKTHROUGH DRILLING PERFORMANCE & COST SAVINGS FOR OPERATOR	55
<i>Fawaz Al-Salah, Saad Al-Mejmed, Atef Abdelhamid, Ali Alnemer, Tahir Gada, Mehul Pandya</i>	
INTEGRATED WORKFLOW SOLUTIONS DELIVER BREAKTHROUGH IN SICHUAN SHALE GAS DRILLING	71
<i>Wenzhe Li, Liang Tang, Ye Zhuang, Lu Zhang, Yifan Cai, Yanhua Yao, Xingning Huang, Feng Gui, Wei Gao, Ji Ma</i>	
NOVEL SAND CONTROL DESIGN METHOD USING DATA-DRIVEN APPROACH	83
<i>Thanawit Ounsakul, C. W. Graham Grant, Noppanan Nopsiri, Katha Wuthicharn</i>	
INTEGRATED WORKFLOW FOR FEASIBILITY STUDY OF CUTTINGS REINJECTION BASED ON 3D GEOMECHANICS ANALYSIS AND CASE STUDY	93
<i>Xinpu Shen</i>	

KNOWLEDGE SHARING EPOSTER SESSION

SODIUM SILICATE BASED DRILLING FLUID APPLICATION IN GULF OF THAILAND TO STABILISE WELLBORE: A CASE STUDY	121
<i>Waleepon Sukarasep, Rahul Sukanta Dey, Visarut Phonpuntin</i>	
FIRST IMPLEMENTATION OF AN INNOVATIVE MUD-REMOVAL SOLUTION TO IMPROVE WELL INTEGRITY IN EGYPT	132
<i>Ahmed Abdulaal, Mohamed El Nadoury, Surya Pallapothu, Fayed Mohamed, Joseph Younan, Yasser Sabra</i>	
FLUID MAPPING-WHILE-DRILLING DE-RISKS RESERVOIR AND FLUID DATA ACQUISITION WORKFLOW IN A BROWN FIELD	142
<i>Norsharmila Abdul Wahab, Muhammad Haniff Suhaimi, Aryanore Nafarine Antuni, W Nor Afiqah W Aziz, Muhammad Zaki Mohiyaddin, Aldrick Garcia Mayans, Shahid Azizul Haq</i>	
A SPECTACULAR CEMENTING RECORD IN MYANMAR OFFSHORE DEEPWATER WELL	160
<i>Gang Sun, Mohammad Solim Ullah, Yi Li, Mukesh Maheshwari, Thirayu Khumtong, Shao Chun Xiong, Wu Chang Ai, Balasundaram Balaraman, Mic Mac Edward, Feng Chen, De Gang Yao</i>	
A NOVEL APPROACH OF DYNAMIC PARAMETER CALCULATION IN REAL TIME WHILE MANAGED PRESSURE CEMENTING AND ITS APPLICATION IN ULTRA-DEEP WELL	171
<i>Haobo Zhou, Guo Wang, Jinge Liu, Lianzhong Sun, Hongning Zhang</i>	
VALUABLE CUTTINGS-BASED PETROPHYSIC ANALYSIS SUCCESSFULLY REDUCES DRILLING RISK IN HPHT FORMATIONS	183
<i>Jianlin Chen, Yanhua Yao, Yingbiao Liu, Zhaofei Wang, Craig Collier, Wenhuan Tang</i>	
USING DATA-MINING CRISP-DM METHODOLOGY TO PREDICT DRILLING TROUBLES IN REAL-TIME	203
<i>Salem Al Gharbi, Abdulaziz Al-Majed, Abdulazeez Abdulraheem, Shirish Patil, Salaheldin Elkatatny</i>	
A NEW RE-FRACTURING CANDIDATE SELECTION METHOD FOR MULTI-FRACTURED HORIZONTAL WELL IN TIGHT OIL RESERVOIRS	221
<i>Liang Tao, Xiaozhuo Zhang, Shubo Yang, Sheng Xian, Yuhang Zhao, Zhihong Zhao</i>	
A COMPREHENSIVE MODEL FOR GAS INFLUX DETECTION AND CONTROL WHILE MANAGED PRESSURE DRILLING AND ITS APPLICATION	231
<i>Hongkang Fan, Shanhong Jiang, XianHai Zhou, Guo Wang, Haobo Zhou, Hongning Zhang</i>	
A NOVEL APPROACH TO DRILLING ENGINEERING SENSITIVITY ANALYSIS AND VISUALIZATION	241
<i>Hendrik Suryadi</i>	

TECHNICAL SESSION 03: CASE STUDIES: WELL TECHNOLOGY ADVANCEMENTS

FIRST AUTONOMOUS INFLOW CONTROL DEVICE AICD DEPLOYMENT IN WASSANA FIELD	250
<i>Pongpak Taksaudom, Tim Kelly, Atisuda Meeteerawat, David Carter, Kannappan Swaminathan, Aymeric Lozet, Chee Seong Tan, Kulapat Watana, Nicholas Moses, Gordon Goh, Amrendra Kumar, Suba-Rao Krishnamoorthy</i>	

APPLICATION OF HYDRAULIC FRACTURING CANDIDATE SELECTION LEADING TO OIL PRODUCTION BOOST FROM MULTI-LAYERED, LOW-PERMEABILITY RESERVOIRS: A SUCCESSFUL CASE STUDY IN THAILAND	266
<i>Marut Wantawin, Thum Sirirattanachatchawan, Theerapat Suppachokinirun, Kittithuch Hnuruang, Sorawee Rongdechprateep, Kritsada Charoeniwesnukul</i>	

ACHIEVING INJECTIVITY OPTIMIZATION AND ZONAL RATES ALLOCATION THROUGH MULTI-ZONE INTELLIGENT COMPLETION TECHNOLOGY – A FIELD B CASE STUDY FROM OFFSHORE MALAYSIA	279
<i>Fuziana Tusimin, Latief Riyanto, Nurul Aula A'akif Fadzil, Nur Syazana Sadan, Asba Mazidah Abu Bakar, Nik Fazril Ain Sapian, A. Hafriz A. Wahid, M. Farris Bakar, Noman Shahreyar, Zulkiflee Hamzah</i>	

MAXIMIZING INJECTION PERFORMANCE THROUGH FIT-FOR-PURPOSE DYNAMIC UNDERBALANCE PERFORATION USING UNCONVENTIONAL GUN SYSTEM IN OFFSHORE WELL, SARAWAK, MALAYSIA	294
<i>Nurul Aula A'akif Fadzil, Nik Fazril Ain Sapian, Fuziana Tusimin, Latief Riyanto Latief Riyanto, Shazana M Zaki, Asba Madzidah Abu Bakar, Nur Syazana Sadan, M Faris Bakar, Adhi Naharindhra Adhi Naharindhra, Mohd Al Perdaus Misron, Kerry Daly, Ahmed Abdelatty Abbas Ibrahim, Nurbaiti Baharuddin</i>	

LESSONS LEARNED FROM THE FIRST CHEMICAL SAND CONSOLIDATION IN ZAWTIKA FIELD	307
<i>Wiwat Wiwatanapataphee, Thanita Kiatrabile, Pipat Lilaprathuang, Noppanan Nopsiri, Panyawadee Kritsanamontri</i>	

TECHNICAL SESSION 05: INNOVATIVE / EMERGING METHODOLOGIES

AUTOMATIC IDENTIFICATION OF ROCK FORMATION TYPE WHILE DRILLING USING MACHINE LEARNING BASED DATA-DRIVEN MODELS	317
<i>Enrique Z. Losoya, Narendra Vishnumolakala, Samuel F. Noynaert, Zenon Medina-Cetina, Satish Bukkapatnam, Eduardo Gildin</i>	

NOVEL DUAL-TUBING TECHNIQUE TO ELIMINATE THE SHUT-IN PERIOD IN CO ₂ HUFF-N-PUFF INJECTION FOR HEAVY OIL CARBONATE RESERVOIRS	332
<i>Zakaria Hamdi, Nirmal Mohanadas, Margarita Lilaysromant, Oluwole Talabi</i>	

RESIN SQUEEZE OPERATION TO SUCCESSFULLY SEAL MICRO-CHANNELS AND ELIMINATE SUSTAINED CASING PRESSURE OF A SOUR GAS WELL	347
<i>Ying Wang, Xin Zheng, Li Li, Jianbo Yuan, Minh Vo, Richard Reading, Junliang Zhang</i>	

TECHNICAL SESSION 02: ADDRESSING GEOPRESSURE AND GEOMECHANICAL CHALLENGES

INTELLIGENT PRESSURE CONTROL SYSTEM FOR MPD	366
<i>Zhao Hui Song, Fu Qiang Li, Deng Pan Xie, John Zhu, Liam Zeng, Xu Dong Wang</i>	

BRIDGING AGENTS OPTIMIZATION BASED ON PREDICTING INDUCED FRACTURE MODEL FOR DEVIATED WELLS – A CASE STUDY	373
<i>Mohammad Saeed Karimi Rad, Mojtaba Kalhor Mohammadi, Kourosh Tahmasbi Nowtarki</i>	

ANALYTICAL SOLUTION OF STRESS STATE WELLBORE INSTABILITY DUE TO COLLAPSE WASHOUT AND INDUCED FRACTURES	384
<i>Liu Haoge, Md Motiur Rahman, Jing Lu</i>	

INTEGRATED GEOMECHANICS, GEOLOGY, PETROPHYSICS AND MINERALOGY MODEL FOR SUCCESSFUL DEEP HPHT GAS WELL DRILLING	405
<i>Farrukh Moid</i>	

PREDRILL GEOMECHANICAL EVALUATION HELPS IN SUCCESSFUL DRILLING IN HIGH DEPLETION WELLS IN A MATURE FIELD, OFFSHORE SARAWAK, MALAYSIA	414
<i>Mohamad Hafiz Abdul Latip, Avirup Chatterjee, Amitava Ghosh, Priveen Raj Santha Moorthy</i>	

**TECHNICAL SESSION 08: IMPROVEMENT THROUGH INTELLIGENT ANALYSIS
DESIGN AND PROCESSING**

UNLOCK MONO-TRIP GAS LIFT COMPLETIONS LIMITS BY USING A NEW CEMENT- THROUGH PACKER AND A SLIDING SLEEVE WITH RADIO FREQUENCY IDENTIFICATION CAPABILITY	424
<i>Siriwat Hanjawanich, Taylor Shelby, Kanin Laonakornthum, Euan Murdoch, Kanokkorn Piemchaw, Tawatchai Tawatchai Duangkaewwutthikrai, Wantanee Teerasukakul</i>	

DRILLING PERFORMANCE IMPROVEMENT THROUGH USE OF ARTIFICIAL INTELLIGENCE IN BIT AND BOTTOM HOLE ASSEMBLY SELECTION IN GULF OF THAILAND	432
<i>Nichnita Tortrakul, Chatwit Pochan, Steve Southland, Pimjai Mala, Tawpath Pichaichanlert, Yuranan Tangsawanich</i>	

MULTI WELL ANALYSIS DATA PROCESSING FOR EVENT ANALYSIS AND MITIGATION	441
<i>Vallet Laurent, Gutarov Pavel, Chevallier Bertrand, Converset Julien, Paterson Graeme, Vaslin Antoine</i>	

ADVANCED COMPUTATIONAL MODELING FOR ESTIMATING SAFE CUTTINGS LOAD THROUGH MPD SURFACE EQUIPMENT	459
<i>Kedar Deshpande, Pravin Naphade, Chad Wuest</i>	

LEVERAGING ON MACHINE LEARNING SOLUTION FOR PIONEERING WELLS AUGMENTED STUCK PIPE INDICATOR IN REAL TIME CENTRE	472
<i>Mohamad Hazwan Yusoff, Meor Muhammad Hakeem Meor Hashim, Muhammad Hadi Hamzah, Muhammad Faris Arriffin, Azlan Mohamad</i>	

ON THE INFLUENCE OF THE EQUIVALENT CIRCULENT DENSITY FLUCTUATIONS ON THE DEVELOPMENT OF THE WELLBORE NATURAL FRACTURE	482
<i>Arnaud Regis Kamgue Lenwoue, Jingen Deng, Yongcun Feng, Naomie Beolle Songwe Selabi</i>	

TECHNICAL SESSION 06: FIELD DEVELOPMENT AND OPTIMISATION

LOW WELL COST: EFFECTIVE COST OPTIMISATION FOR MARGINAL GREEN FIELD DEVELOPMENT USING FIT-FOR-PURPOSE WELL DESIGN	494
<i>Thivyashini Thamilyanan, Hasmizah Bakar, Irzee Zawawi, Siti Aishah Mohd Hatta</i>	

MATURE FIELD ECONOMIC REJUVENATION WITH INFILL AND RE-ENTRY MULTILATERAL WELL CREATION TECHNIQUES	506
<i>Benjamin Butler, Justin Roberts, Matthew Kelsey, Steffen Van Der Veen</i>	

Author Index