

SPE Annual Caspian Technical Conference 2020

Online
21 - 22 October 2020

ISBN: 978-1-7138-2115-1

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© (2020) 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

SESSION 1: 01T: DATA AND INFORMATION MANAGEMENT I (LIVE Q&A)

UTILIZING AGILE APPROACH FOR WELL CONSTRUCTION PLANNING	1
<i>I. Kussanov, E. Puche, K. Yung</i>	
DIGITALIZATION OF SIMPLE THINGS COST SAVINGS FROM BASIC TRANSFORMATION CASE: KARACHAGANAK FIELD	8
<i>A. Bekbossynova, A. Karachaganak, Y. Bekniyazov</i>	
DEVELOPING STUDENTS' SOCIAL SKILLS AND CAREER PREPAREDNESS WITHIN PETROLEUM ENGINEERING SEMINAR CLASS AT SATBAYEV UNIVERSITY, KAZAKHSTAN	17
<i>A. Nussipkozhayev, M. Syzdykov, A. Jamankulov, B. Haynes</i>	

SESSION 2: 02T: RESERVOIR MANAGEMENT I

FEATURES OF FIELD DEVELOPMENT WITH TIGHT CARBONATE RESERVOIRS BY WATERFLOODING	25
<i>A.R. Mukanov, A. Bigeldiyev, A. Batu, A.M. Kuvanyshv</i>	
INTEGRATION OF SURFACE FACILITIES CONSTRAINTS WITH RESERVOIR MODEL FOR SULPHUR PRODUCTION MANAGEMENT IN KASHAGAN FIELD	49
<i>N. Nogerbek, A. Bukharbayeva, S. Ali, B. Amangaliyev, M. Shambulov, C. Hatiboglu</i>	
IPSM FOR PRODUCTION FORECASTING AND PRODUCTION OPTIMIZATION IN GIANT CARBONATE FIELD KASHAGAN	64
<i>A. Bukharbayeva, C. Hatiboglu, G. Mtchedlishvili, D. Munsyzybayeva, B. uap, B. Muftakhidinov</i>	

SESSION 3: 03T: DATA AND INFORMATION MANAGEMENT II

COMPARISON OF MACHINE LEARNING ALGORITHMS FOR THE DEVELOPMENT OF A FORECASTING TOOL FOR CYCLIC GAS INJECTION IN HYDRAULICALLY-FRACTURED WELLS	78
<i>A. Seilkhanov, D. Otyunshin, G. Novopokrovskiy, E. Artun</i>	
MACHINE LEARNING ENABLES EFFICIENT AND ECONOMIC PROPPANT FRACTURING OPERATIONS THROUGH TAILORED DECISION TREE WORKFLOW	91
<i>A. Khan, M.Y. Jelassi, A. Yudin</i>	
CASE STUDY: IOT PRODUCTION INTELLIGENCE PLATFORM AND ITS FIELD IMPLEMENTATION RESULTS	109
<i>A. Sultabayev, D. Jilmagambetov</i>	

SESSION 4: RESERVOIR MANAGEMENT II

AN OVERVIEWS OF RESERVES AND RESOURCES EVALUATION IN UNCONVENTIONALS	114
<i>C.H. Canbaz, C. Temizel, A. Ozesen, S. Gayde, F. Aksahan</i>	

SIMULATION OF MULTISTAGE ACID FRACTURES IN HORIZONTAL WELL USING MULTIPLE GRID GEOMETRY: TIGHT CARBONATE RESERVOIR CASE	144
<i>I. Volnov, D. Rojas, A. Bibolova, K.T. Lim, J. Amiotte</i>	

MULTIPLE REALIZATION APPROACH IN 3D DYNAMIC MODELING UNDER HYDRAULIC FRACTURING AND GEOLOGICAL UNCERTAINTIES.....	157
<i>A. Bigeldiyev, D. Abdrazakov, D. Kovyazin, A. Batu, V. Malyshev, D. Sidorov, G. Voiglaender, T. Nauruzov</i>	

SESSION 5: PRODUCTION AND OPERATIONS I

CASE STUDY: PLUNGER LIFT APPLICATION DOUBLED OIL PRODUCTION.....	166
<i>Z. Nurkas</i>	

IMPROVEMENT OF HYDRAULIC FRACTURING THROUGH ADVANCED SIMULATION, PRODUCTION HISTORY MATCHING AND FORECASTING.....	173
<i>D. Abdrazakov, A. Bigeldiyev, A. Batu, D. Sidorov, D. Kovyazin, A. Kudalsha, A. Mukanov</i>	

REMEDICATION OF WELLS AFFECTED BY SCALING ON KASHAGAN FIELD	186
<i>B. Daulbayev, B. Naukanov, Y. Khaidarov, M. Esperon, M. Heinerth, M. Freeman, S. Yan</i>	

SESSION 6: PROJECTS, FACILITIES AND CONSTRUCTION / REGULATORY COMPLIANCE / HSE

RE-VISITING THE PROJECT RISK MANAGEMENT FRAMEWORK AND ADAPTING IT FOR THE KAZAKH OIL AND GAS INDUSTRY	195
<i>M. Syzdykov, T. Seitimov, Z. Baibussinova</i>	

WASTES INJECTION PROJECTS IN NORTH CASPIAN SEA AREA.....	211
<i>G. Galiyeva, I. Gaz, L. Francia, M. Kuanyshkaliyeva, N. Yeskaliyev</i>	

NAVAL ARCHITECTURAL CHALLENGES IN KASHAGAN OIL FIELD DEVELOPMENT	222
<i>E. Putorti, G. Cuomo, R. Bridges</i>	

SESSION 7: PRODUCTION AND OPERATIONS II

INTEGRATION OF THE TEMPERATURE DATA FOR CONTROL OF WATER INJECTION CONFORMANCE	238
<i>F. Atakishiyev, A. Sheydayev, A. Zett, D. Zavyalov, L. Murray</i>	

A STUDY ON NEW COPOLYMER COATED MATERIAL FOR MANAGING PARAFFIN WAX DEPOSITION IN PIPELINES PRODUCTION OPERATIONS	262
<i>B. Mombekov, S.A. Aliyu, I.B.M. Saaid, Z. Dairov</i>	

CONFORMANCE CONTROL COMPLETION UNLOCKS PRODUCTION HORIZONS OF TENGIZ FIELD	270
<i>A. Kamispayev, B. Saduakassov, J. Clarke, R. Manakhayev, A. Gazizova</i>	

SESSION 8: DRILLING AND COMPLETIONS

MANAGED PRESSURE DRILLING AS AN ADVANCED SOLUTION FOR DEEP HTHP WELLS AND LONG INTERVALS WITH NARROW SAFE PRESSURE LIMITS	288
<i>D.S. Krivolapov, A.V. Magda, T.B. Soroka, P.Y. Dobrokhleb, S.A. Evdokimov, G.G. Gagloyev, A.V. Novoselov, A.R. Ramazanov, M.S. Attia, V.F. Zvyagin, R.I. Nabiullin, D.R. Khamidullin</i>	
WELL PLANNING AND OPERATIONAL PRACTICES TO DECREASE DIFFERENTIAL STICKING RISK IN TENGIZ FIELD, KAZAKHSTAN	304
<i>I. Tussupbayev, N. Tlepbergenov, K.J. Jung, I. Issayeva, M. Sargunanov, R. Manakhayev</i>	

SESSION 9: RESERVOIR DESCRIPTION AND DYNAMICS I

THE NOVEL APPROACH TO PRESSURE TRANSIENT ANALYSIS IN HIGHLY FRACTURED RESERVOIRS: CASE STUDY FROM PATARDZEULI FIELD, GEORGIA	313
<i>S. Ramatullayev, B. Akbayev, D. Tsaplin, J. Urazaliev, A. Goloborodko</i>	
A ROBUST DOWNSCALING METHOD FOR INTEGRATION OF STATIC AND DYNAMIC MODELS	325
<i>Y. Dair, D. Li, R. Saifutdinov, B. Yergaliyeva, G. Karabakiyeva, I.T. Ehighebo</i>	
EFFECT OF PORE SIZE DISTRIBUTION ON PHASE BEHAVIOR OF SOUR GAS AND HYDROCARBON MIXTURES IN TIGHT OIL RESERVOIRS	337
<i>L. Wang, J. Ismailova, Y. Uteubayeva, J. Chen, K. Kunzharikova</i>	

SESSION 10: E&P GEOSCIENCE AND FORMATION EVALUATION I

ENABLING DRILLSTEM TESTING IN ANSAGAN FIELD IN HIGH-PRESSURE, HIGH H ₂ S PRE CASPIAN DEEP WELLS	350
<i>A. Burlibayev, M. Baishuakov, M. Aimagambetov, M. Kydatov, Y. Kaipov, P. Kumar, B. Akbayev</i>	
INTEGRATING BIOMARKER ANALYSIS WITH CARBON STABLE ISOTOPE SIGNATURES FOR GENETIC CLASSIFICATION AND TRACING POSSIBLE MIGRATION PATHWAYS OF HYDROCARBONS OF PRE CASPIAN BASIN	364
<i>Y.S. Seitkhaziyev, R.N. Uteyev, N.D. Sarsenbekov, Y.T. Tassemenov</i>	
OPTIMIZATION OF WELL TESTING FOR CURRENT RESERVES ESTIMATION WITH MODERN WIRELINE FORMATION TESTERS AND OPEN HOLE LOGS IN EXPLORATION WELLS DRILLED IN HIGH POROSITY SANDSTONE SUPRASALT SEDIMENTS FIELD	387
<i>V. Blinov, A. Filimonov, S. Ramatullaev, E. Tasemenov, S. Saparova</i>	

SESSION 11: RESERVOIR DESCRIPTION AND DYNAMICS II

NUMERICAL CALCULATION OF THE PRESSURE DROP AND SATURATION OF TWO-PHASE FLOW THROUGH POROUS MEDIUM	395
<i>Z. Akasheva, B. Assilbekov, A. Kudaikulov, D. Bolysbek</i>	
DETAILED SECTOR MODEL TO RECONCILE SURVEILLANCE RESULTS AND HIGH PERMEABILITY, GEOLOGIC, FEATURES; EXAMPLE FROM KASHAGAN FIELD, KAZAKHSTAN	407
<i>N.P. Stephens, B. Yergaliyeva, A. Zhazbayeva, B. Uap</i>	

METHODOLOGY FOR EXPLORATION WELL TESTING WITH ESP-DST IN CASPIAN SEA. THE CASE STUDY IN UNCONSOLIDATED SANDSTONE WITH HEAVY OIL.....	421
<i>I. Dosmukhambetov, B. Taubayev, U. Yesbolov, A. Sadykov, M. Shmalin, B. Akbayev, Y. Kaipov, O. Amanbayev, B. Khaziev</i>	

SESSION 12: E&P GEOSCIENCE AND FORMATION EVALUATION II

WELL PLACEMENT HELPS TO MANAGE LARGE STRUCTURAL UNCERTAINTY WHILE DRILLING A HORIZONTAL WELL IN S NURZHANOV FIELD, SHOW CASE FROM KAZAKHSTAN.....	436
<i>K. Adilbekov, K. Kozov, E. Mukanov, I. Chzhen, Y. Karychev, R. Nevzorov, A. Makhambetov, D. Ospanov, D. Shozhikov, A. Lukpanov, M. Medvedev, K. Alexeev</i>	
A COMPREHENSIVE APPROACH TO SOLVING THE PROBLEM OF INVOLVING THE DEVELOPMENT OF HYDROCARBON RESERVES OF THE EASTERN USTYURT'S FIELD.....	446
<i>O. Khodos, D. Maysyuk, I. Ushakov, F. Yangaliev, R. Yakubov</i>	
USE OF LOGGING WHILE DRILLING EQUIPMENT IN WASHDOWN MODE UNDER MANAGED PRESSURE DRILLING CONDITIONS IN TENGIZ	458
<i>R. Manakhayev, I. Tussupbayev, M. Sargunov, N. Kalzhekov, G. Kulov, N. Tlepbergenov</i>	

SESSION 13: KNOWLEDGE SHARING EPOSTERS

FROM FIELD OPERATIONS TO ECONOMICS: BREAKING THE BARRIERS. NEXT LEVEL OF INTEGRATION.....	464
<i>A. Mukanov, A. Saginbayev, R. Salikhov</i>	
DEVELOPMENT OF YOUNG ENGINEERS IN A COMPANY THROUGH ORGANIZATION OF INTERNAL COMPETITIONS.....	476
<i>A. Kurmankulov, S. Ramatullayev, D. Sidorov</i>	
STREAMLINE-BASED MISCIBLE GAS FLOOD PERFORMANCE EVALUATION AND PATTERN BALANCING: A CASE STUDY FROM THE GIANT KASHAGAN FIELD.....	491
<i>N.N. Ashenov, L. Francia, B. Haynes Jr.</i>	
FIELD CASE: COMPLEX WATER INFLOW RISK EVALUATION BY VARIOUS SURVEILLANCE METHODS.....	512
<i>A. Skopich, E. Neubauer, R. Sadyrbakiyev, L. Xing</i>	
ADVANCED ROD PUMP OPTIMIZATION APPROACH – CASE STUDY	519
<i>A. Sultabayev</i>	
AN INTEGRATED APPROACH TO WELL INTEGRITY DIAGNOSTICS UTILIZING NEXT GENERATION PASSIVE ACOUSTIC LOGGING TECHNOLOGY	526
<i>F. Atakishiyev, R. Ramazanov, F. Allan, A. Zett, T. Graham, A. Imrie, P. Tracadas, K. Mirzayev</i>	
RISK FACTORS FOR OIL AND GAS WORKERS ON THE OFFSHORE ICE-RESISTANT PLATFORM IN THE CASPIAN SEA	548
<i>Y.A. Komeeva</i>	
DRILLING PROBLEMS FORECAST SYSTEM BASED ON NEURAL NETWORK.....	555
<i>S. Borozdin, A. Dmitrievsky, N. Eremin, A. Arkhipov, A. Sboev, O. Chashchina-Semenova, L. Fitzner, E. Safarova</i>	

RFID TECHNOLOGY EXPANDED INTO THE DRILLING SPACE WITH PARTICULAR EMPHASIS ON EFFICIENCIES	569
<i>L. Pasimeni, I. Lukman, B. Tlepbergenov, A. Dadinov, T. Kabbasov, Y. Yeskairov, D. Zhumashev, A. Suleimenov, A. Aliyeva, A. Zholdaskaliyev, A.S.Z. Ariff, O.M. Okorie</i>	
WATERFLOOD OPTIMIZATION PLANNING BASED ON MRT ANALYSIS OF LONG-TERM BOTTOM-HOLE PRESSURE RECORDS	576
<i>B. Ganiev, A. Lutfullin, R. Farakhova, D. Gulyaev, L. Zinurov, A. Aslanyan</i>	
PRESSURE TRANSIENT ANALYSIS: INSIGHT FROM INDUSTRY	595
<i>A. Mukanov, D. Kassenov, A. Kudalsha</i>	
IMPROVEMENTS IN ICE THICKNESS MEASUREMENTS TECHNIQUES IN ICE ENVIRONMENT	608
<i>A.A. Tlepkaziyeva, A.T. Yergaliyev</i>	

Author Index