

SPE Thermal Well Integrity and Design Symposium 2019

Banff, Canada
19 - 21 November 2019

ISBN: 978-1-7138-0222-8

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© (2019) by Society of Petroleum Engineers
All rights reserved.

Printed with permission by Curran Associates, Inc. (2020)

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

DAY 1

SESSION 1: CASING AND WELL DESIGN

FRAMEWORK FOR DEFINING THERMAL CYCLE SEVERITY AND ASSESSING IMPACTS ON THERMAL WELL INTERMEDIATE CASING SYSTEM INTEGRITY	1
<i>D. Dall'Acqua, M. Chartier</i>	
ENHANCEMENT OF CURRENT METHODOLOGIES USED FOR TUBULAR CONNECTION PRODUCT LINE VALIDATION	14
<i>Jue. Xie, Jun. Xie</i>	
EVALUATING TEMPERATURE RATE NEAR THE WELLBORE CONSIDERING SLOW WARM-UP CASE FOR A SAGD PRODUCER WELL WITH DIFFERENT COMPLETION CONFIGURATIONS USING DYNAMIC FLOW SIMULATIONS	30
<i>C. Nascimento, B. Demirdal, J. Gauthier</i>	
SOURCES OF STRAIN LOCALIZATION IN THERMAL WELLS AND MANAGING THE RISKS THEY INTRODUCE THROUGH ENGINEERING DESIGN	45
<i>S.M. Miller, K.T. Smith, M.A. Chartier, G. Meijer</i>	

SESSION 2: THERMAL ISOLATION TECHNOLOGY

SILICATE-ACTIVATED GEOPOLYMER ALTERNATIVES TO PORTLAND CEMENT FOR THERMAL WELL INTEGRITY	71
<i>E. van Oort, M. Juenger, X. Liu, M. McDonald</i>	
QUANTIFYING 2D AND 3D FRACTURE LEAKAGE PATHWAYS OBSERVED IN WELLBORE CEMENT AFTER UNIAXIAL COMPRESSIVE LOADING	82
<i>X. Yang, E. Kuru, M. Gingras, S. Iremonger, J. Taylor, Z. Lin</i>	
FOAM FORMULATION FOR HIGH TEMPERATURE SAGD APPLICATIONS	102
<i>L.A. Adetunji, A. Ben-Zvi, A. Filstein</i>	

SESSION 3: NEAR-SURFACE CASING CORROSION ON THERMAL WELLS

APPLICATION OF HIGH TEMPERATURE COATINGS FOR NEAR-SURFACE CORROSION MITIGATION ON SAGD WELLS	110
<i>I. Khallad, M. Habib, V. Savino</i>	
CORROSION FAILURE AND CONTROL OF CARBON STEEL AND ANTI-CORROSION PERFORMANCE EVALUATION OF CANDIDATE MATERIALS IN THERMAL APPLICATIONS	125
<i>J. Li, C. Sun, M. Roostaei, M. Mahmoudi, V. Fattahpour, H. Zeng, J.L. Luo</i>	
LIFETIME TUBULAR DESIGN: COMBINING EFFECTS OF CORROSION AND MECHANICAL WEAR	136
<i>Z. Liu, R. Samuel, A. Gonzales, Y. Kang</i>	

DAY 2

SESSION 4: INSTRUMENTATION/DTS/DAS

PROGNOSTICS THERMAL WELL MANAGEMENT: A REVIEW ON WELLBORE MONITORING AND THE APPLICATION OF DISTRIBUTED ACOUSTIC SENSING DAS FOR STEAM BREAKTHROUGH DETECTION	147
<i>M. Soroush, M. Roostaei, V. Fattahpour, M. Mahmoudi, D. Keough, L. Cheng, K. Moez</i>	

SESSION 5: FLOW CONTROL DEVICES

EVALUATION, IMPLEMENTATION, AND OPERATIONS OF AN FCD FOR SAGD PRODUCER WELLS	167
<i>N. Neeteson, H. Heukelman, D. Zhu, S. Thompson</i>	
HORIZONTAL STEAM INJECTION LINER DEPLOYED FLOW CONTROL DEVICE DESIGN DEVELOPMENT AND TESTING	179
<i>T. Gorham, J. Sims, R.S. Buell, R. Miller, B. Fermaniuk, H. Heukelman</i>	
BEST PRACTICES IN DESIGN OF STEAM SPLITTERS FOR STEAM-ASSISTED GRAVITY DRAINAGE INJECTION WELLS	190
<i>C. Nascimento, N. Gomez-Bustamante, M. Melo</i>	

SESSION 6: GEOMECHANICS

GEOMECHANICAL SIMULATIONS TO DESIGN WELL INTEGRITY	211
<i>Y. Yuan, T.J. Boone</i>	

DAY 3

SESSION 7: GLOBAL STRATEGIES FOR MAINTAINING WELL INTEGRITY

DOUBLE BARRIER STRATEGY FOR HEAVY OIL PRODUCER WELL IN THE SOUTH OF OMAN	229
<i>W. Al Shizawi, A. Al Nairi, A. Cooper, K. Al Mahrazy, P. Putra</i>	

SESSION 9: BEST PRACTICES FOR FCDS IN SAGD WELLS

FIELD APPLICATION OF TUBING DEPLOYED INFLOW CONTROL DEVICES ICDS TO REPAIR LINER FAILURES IN SAGD COMPLETIONS: DIAGNOSIS, DESIGN, DEPLOYMENT AND OUTCOME	236
<i>M. Saeedi, J. Cowle, R. Cross, J. Stevenson, A. Tuttle</i>	
AN OVERVIEW OF THE FIELD PERFORMANCE OF TUBING DEPLOYED FLOW CONTROL DEVICES IN THE SURMONT SAGD PROJECT	248
<i>K. Nespov, J. Chacin, J. Ortiz, J. Morter, U. Romanova, J. Bilic, K. Gohari, O. Becerra</i>	
SAGD CIRCULATION STRATEGY UTILIZING FLOW CONTROL DEVICES	265
<i>J. Batias, J. Ortiz, K. Nespov</i>	
EFFECTIVE RESERVOIR MANAGEMENT WITH FLOW CONTROL DEVICES FOR SAGD PRODUCER WELLS IN MACKAY RIVER	279
<i>G. Rosi, D. Zhu, D. O'Hagan</i>	
WELL INTEGRITY ISSUES: EXTREME HIGH-PRESSURE HIGH-TEMPERATURE WELLS AND GEOTHERMAL WELLS A REVIEW	300
<i>T. Phi, R. Elgaddafi, M. Al Ramadan, R. Ahmed, C. Teodoriu</i>	
Author Index	