

SPE Symposium: Hydraulic Fracturing in Russia - Experience and Prospects

Online
22 – 24 September 2020

ISBN: 978-1-7138-2420-6

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: R&D FOR HYDRAULIC FRACTURING (PART 1)

ULTRAFAST SIMULATIONS OF ASYMMETRIC FRACTURE GROWTH IN LENGTH AND HEIGHT USING LAGRANGIAN MECHANICS	1
<i>Aleksandra Peshcherenko, Dmitry Chuprakov</i>	
OPTIMIZATION OF THE VERKHNECHONSKOYE FIELD DEVELOPMENT PROCESS BY MAPPING GEOMECHANICAL PROPERTIES AND STRESSES	12
<i>Vasiliy Kuleshov, Valeriy Pavlov, Nikolay Pavlyukov, Dmitriy Korolev, Mikhail Samoilov, Aleksandr Kozyrev</i>	
PRACTICAL ASPECTS OF HYDRAULIC FRACTURING DESIGN OPTIMIZATION USING MACHINE LEARNING ON FIELD DATA: DIGITAL DATABASE, ALGORITHMS AND PLANNING THE FIELD TESTS	24
<i>Viktor Duplyakov, Anton Morozov, Dmitry Popkov, Albert Vainshtein, Andrei Osiptsov, Evgeny Burnaev, Egor Shel, Grigory Paderin, Polina Kabanova, Ildar Fayzullin, Ruslan Uchuev, Albert Mukhametov, Alexander Prutsakov, Ivan Vikhman, Maxim Staritsyn</i>	

SESSION 1: R&D FOR HYDRAULIC FRACTURING (PART 2)

TECHNOLOGICAL AND ECONOMICAL OPTIMIZATION OF A HYDRAULIC FRACTURING DESIGN: CHOICE OF PROPPANT, LIQUID AND PUMP SCHEDULE	44
<i>Egor Shel, Grigory Paderin, Evgeny Kazakov, Elnar Sayfutdinov, Ruslan Gaynetdinov, Ruslan Uchuev, Albert Mukhametov, Alexander Prutsakov</i>	

SESSION 1: R&D FOR HYDRAULIC FRACTURING (PART 3)

ADVANCED MODELING AND NEW FIT FOR PURPOSE FLUIDS UNLOCK POTENTIAL OF HOT CARBONATE RESERVOIRS DURING ACID FRACTURING IN UZBEKISTAN	57
<i>Dmitriy Abdrazakov, Yerlan Yerikuly, Bektursyn Komekbayev, Khurshid Rasulov</i>	

POSTER SESSION -1

INTEGRATED APPROACH TO MULTISTAGE FRACTURING DESIGN	71
<i>Alexey Andreev, Vladimir Astafyev, Mikhail Samoilov</i>	

SESSION 2: HYDRAULIC FRACTURING CASE STUDIES: FROM PILOTS TO INTEGRATED PROJECTS -1 (PART 1)

A DECADE OF MULTI-ZONE FRACTURING TREATMENTS IN RUSSIA	82
<i>Vladimir Astafyev, Mikhail Samoilov, Ildar Fayzullin, Igor Kuvshinov, Alexey Mitin, Georgy Fedorov, Mikhail Gaponov, Kirill Ovchinnikov, Ruslan Khusainov, Evgeny Fedorov, Mikhail Lushev</i>	

SESSION 2: HYDRAULIC FRACTURING CASE STUDIES: FROM PILOTS TO INTEGRATED PROJECTS -1 (PART 2)

COMPLEX APPROACH TO STIMULATE GAS FORMATIONS SERVES EASTERN SIBERIA 140
Alexandr Kapkaev, Alexey Yudin, Maxim Paskhalov, Petr Kurkin, Artem Laptev, Konstantin Pushnikov, Maxim Makarevich

PROPPANT TRANSPORT CAPABILITIES OF HIGH-VISCOSITY FRICTION REDUCERS AT RELATIVELY LOW RATES: ADVANCED MODELING AND FIELD VALIDATION 152
Dmitriy Abdrazakov, Yeltay Juldugulov, Ruslan Kruglov, Svetlana Pavlova, Sergei Vereschagin, Dimitry Chuprakov, Valentin Ivanov

COLD CHANNEL FRACTURING: SYNTHESIS OF FRACTURING TECHNOLOGIES IN SOUTH PRIOBSKOE OILFIELD 166
Ural Mavletkulov, Denis Vernigora, Dmitry Valnev, Artem Laptev, Sergei Vereschagin, Svetlana Pavlova, Alexey Borisenko, Ivan Vikhman, Ruslan Uchuev, Alexandr Prutsakov, Nikolai Chebykin, Andrey Serdyuk

SESSION 4: REFRAC AND HYDRAULIC FRACTURING IN EXTREME ENVIRONMENTS (PART 1)

MULTISTAGE HORIZONTAL WELLS REFRACTURING BY MEANS OF ABRASIVE JET PERFORATION + FRAC TECHNOLOGY 178
Rustam Shaykamalov, Mikhail Gaponov, Marat Mukhametshin, Vladislav Bildanov, Alexey Katermin, Ildar Bashirov

RE MULTI FRACTURING WITH FLOW DIVERTER 189
Marat Rimovich Amirov, Rifat Maratovich Kuzakhmedov, Aleksey Aleksandrovich Boroday, Ivan Gennadyevich Kashtanov, Alexander Victorovich Yazkov, Vladimir Vladimirovich Solovyev, Andrey Sergeevich Butkeev, Petr Ilyich Eliseev, Aleksandr Nikolaevich Bagaev, Ivan Sergeevich Fomin, Georgiy Evgenievich Fedorov, Ruslan Rafailovich Bakirov, Mikhail Vladimirovich Fomin, Francisco E. Fragachan, Cristian M. Cruz, Mohammed Omer, Mikhail Vladimirovich Brendin, Denis Sergeevich Trofimov

SESSION 4: REFRAC AND HYDRAULIC FRACTURING IN EXTREME ENVIRONMENTS (PART 2)

MULTI-INTERVAL HYDRAULIC SANDBLAST PERFORATION OF WELLS WITH SELECTIVE HYDRAULIC FRACTURING. APPLICATION RESULTS, PROSPECTS 213
Ramil Magirovich Sabitov, Aleksey Andreevich Panasenko, Anton Vladimirovich Rodionov, Timur Alfredovich Khakimov

FIRST IN RUSSIA MULTISTAGE FRACTURING JOB WITH SAND SCREEN COMPLETION IN POORLY CONSOLIDATED FORMATION 225
Aleksey Konopelko, Anton Shirobokov, Mikhail Pustovalov, Maxim Melnikov, Mikhail Bakin

POSTER SESSION -2

GEOPHYSICAL AND SEISMIC STUDIES TO DETERMINE REGIONAL STRESSES AT VARIOUS OBJECTS OF THE ROMASHKINSKOYE FIELD 235
Artur Gabdrakhmanov, Allexander Ermoshkin

Author Index