

中文核心期刊
中国科技核心期刊
RCCSE中国核心学术期刊
北方期刊优秀奖
辽宁省优秀期刊一等奖
中国《CAJ-CD规范》优秀奖

俄罗斯《文摘杂志》(AJ)收录
英国《科学文摘》(SA)收录
美国《石油文摘》(PA)收录
美国《化学文摘》(CA)收录
美国《剑桥科学文摘》(CSA)收录
万方数据库收录

ISSN 1006-6535
CN 21-1357/TE



特种油气藏

TEZHONG YOUQICANG
SPECIAL OIL & GAS RESERVOIRS

NO. 1 2013



万方数据

第20卷 第1期 Vol.20 No.1
主管: 中国石油天然气集团公司
主办: 中国石油辽河油田公司

特种油气藏

目次

1994年创刊(双月刊)

第20卷 第1期 总第96期

2013年2月25日出版

技术顾问 马玉龙 主编 张方礼

副主编 刘德铸

常务副主编 王威

主管单位 中国石油天然气集团公司
主办单位 中油辽河油田公司
承办单位 辽河油田公司勘探开发研究院
辽河油田公司钻采工艺研究院
编辑出版 《特种油气藏》编辑部
印刷 辽河石油报印刷厂
发行范围 国内外公开发行
国内发行 辽宁省盘锦市邮政局 邮发代号:8-173
国外发行 中国国际图书贸易总公司
(北京399信箱) 国外代号:1504Q
地址 辽宁省盘锦市辽河油田公司
勘探开发研究院
电话 0427-7823579;0427-7820262
邮编 124010
投稿网址 www.sogr.com.cn
刊号 ISSN 1006-6535 CN21-1357/TE
广告许可 211100100016
证号
定价 26.00元/册
责任编辑 刘兆芝 孟凡勤 技术编辑 黄华彪
彩页编辑 孟凡勤 英文翻译 冷仁春

SPECIAL OIL & GAS RESERVOIRS

Vol.20 No.1(Sum.No.96)Feb.2013

Governing Unit CNPC

Sponsor Liaohe Oilfield Company of PetroChina

Undertaken by E&D Research Institute of Liaohe Oilfield

Company of PetroChina

Drilling And Oil Production Technology Research

Institute of Liaohe Oilfield Company of PetroChina

Technical Consultant MA Yu-long

Editor in Chief ZHANG Fang-li

Vice Editor in Chief LIU De-zhu

Standing Vice Editor in Chief WANG Wei

Editor & Publisher Editorial Board of Special Oil & Gas Reservoirs

Address E&D Research Institute of Liaohe Oilfield Company,

Petro China, Panjin, Liao-ning, China, 124010

Tel 0427-7823579 0427-7820262

Printing The Press of Liaohe Petroleum Newspaper Office

Overseas Distributor China International Book Trading

Corporation P.O.Box 399, Beijing, China

(Code, No.1504Q)

Subscription Rate(Overseas) US \$26 per copy

US \$156 per year

综 述

国外减阻水压裂液技术及其研究进展 蒋官澄,许伟星,李颖颖,黎 凌(1)
油田伴生气利用现状与前景展望 --- 潘 一,徐利旋,刘守辉,孙 林,杨双春(7)

地质勘探

白音查干凹陷锡林好来油田白云质泥岩储层研究

..... 胡望水,雷志诚,许 辰,刘腾蛟,徐 博(11)

准北春晖油田勘探成效分析 王学忠,王金铸,乔明全(15)

辽河拗陷东部凸起上古生界致密砂岩气成藏特征

..... 李春华,于 鹏,毛俊莉,李 楠(19)

鄂尔多斯盆地东南部延长组页岩储层特征及控制因素

..... 曾秋楠,于炳松,李昱霏(23)

柴达木盆地西南区古近—新近纪坡折带及其对岩性圈闭的控制作用

..... 肖传桃,帅松青,吴光大(27)

煤层气储层孔隙结构分形特征定量研究

..... 杨 宇,孙晗森,彭小东,李 军,彭少涛(31)

川中蓬莱地区须二段储层成岩相及其对孔隙结构影响 赖 锦,王贵文(34)

巴喀油田八道湾组致密砂岩储层沉积特征 吴俊红(39)

低序级断层识别与精细描述技术研究

..... 刘显太,李 军,王 军,韩 双,张军华(44)

鄂尔多斯盆地东南部古构造恢复及地质意义

..... 朱定伟,丁文龙,游声刚,邓礼华,卞文杰(48)

油藏工程

低渗透油藏压裂井生产动态分析 --- 姜瑞忠,杨 明,王公昌,徐建春,王睿恒(52)

复杂工况整体压裂优化软件研发及应用

..... 程远方,刘钰川,于浩波,王运涛,董丙响(56)

扶余油田自生高岭土对注蒸汽的影响 蒋有伟,沈德煌,吴永彬(60)

水平井开发效果多指标综合评价体系的建立与应用

..... 李 斌,杨志鹏,毕永斌,刘振林,房梦斋(63)

二维条件下天然裂缝对压裂裂缝影响的分形分析 李 玮,闫 铁(67)

煤岩储层渗透率动态变化模型 艾 池,栗 爽,李净然,白 琳(71)

直角三角形小断块油藏注采井网模拟优化研究 关富佳,雷小丽(74)

压裂水平井见水阶段产量递减规律研究 郝明强,刘 雄,庄永涛(77)

油藏开发单井产能非均质性定量表征 严 科(80)

泌阳凹陷泌10区剩余油分布特征与开发技术对策 徐 波(83)

低渗透砂岩油藏水锁损害影响因素分析

..... 陈 鹏,王新海,李公让,张敬辉,邓承器(89)

欢喜岭油田齐40块蒸汽驱开发蒸汽腔发育规律研究 范世通(92)

鲁克沁油田鲁2块水驱后天然气气水交替驱油模拟研究

..... 李松林,张云辉,赵 健(95)

葡萄花油田葡47区块低渗透油藏水平井优化设计

..... 郑爱玲,刘德华,邵燕林(99)

一种确定水驱曲线直线段合理性的新方法

..... 刘英宪,任晓宁,马奎前,周海燕(102)

轻质原油低温氧化动力学研究 --- 王杰祥,夏金娜,刘双龙,王建海,任文龙(105)

河南油田含油污泥深部液流转向剂的研制与应用 陈 渊(108)

火烧油层物理模拟相似原理研究

..... 刘其成,程海清,张 勇,赵庆辉,刘宝良(111)

稠油相对渗透率实验过程出口端管线水驱油特征

..... 高旺来,沈德煌,李芳芳(115)

基于CT扫描测定低渗岩心相对渗透率曲线的方法

..... 冷振鹏,吕伟峰,张祖波,马德胜,刘庆杰(118)

溶度差法计算地层油-CO₂体系的最小混相压力

..... 张 可,李 实,秦积舜,马德胜,陈兴隆(122)

钻采工程

超稠油水平井双管柱开采技术 李玉君,任芳祥(126)

元坝气田超深高含硫水平井测试投产一体化技术 陈 琛,曹 阳(129)

煤层气压裂中阶梯排量测试确定地层闭合压力的新方法 李 亭(132)

塔河油田水平井堵水数值模拟 刘 佳,程林松,黄世军,王 雷(135)

边水油藏水平井注泡沫挡水技术 刘永革,刘慧卿,庞占喜,卢 川(139)

其 他

SAGD项目经济评价模式探讨 刘 斌,易维容,梁生朗,王国春(143)

压裂参数对水平页岩气井经济效果的影响

..... 李庆辉,陈 勉,金 衍,赵 飞,姜海龙(146)

期刊基本参数:CN21-1357/TE·1994-b·A4·160·zh·P·¥26.00·4500·40·2013-2

Summary

Technology of Fracturing Fluids with Friction-reducing Water Overseas and Its Research Progress

..... JIANG Guan-cheng, XU Wei-xing, LI Ying-ying, LI Ling(1)
Present Utilization Status and Prospect of Oilfield Associated Gas PAN Yi, XU Li-xuan, LIU Shou-hui, SUN Lin, YANG Shuang-chun(7)**Geologic Exploration**

Study on Dolomite Reservoir of Xilinbaolai Oilfield in Baiyinchagan Depression

..... HU Wang-shui, LEI Zhi-cheng, XU Chen, LIU Teng-jiao, XU Bo(11)

Exploration Effect Analysis of Chunhui Oilfield in the Northern Junggar Basin WANG Xue-zhong, WANG Jin-zhu, QIAO Ming-quan(15)

Diagenetic Characteristics of Tight Sandstone of Upper Paleozoic of East Uplift in Liaohe Depression

..... LI Chun-hua, YU Peng, MAO Jun-li, Li Nan(19)

Reservoir Characteristics and Control Factors in the Shale Bed of Yanchang Formation of Southeast in Ordos Basin

..... ZENG Qiu-nan, YU Bing-song, LI Yu-fei(23)

Paleogene-Neogene Slope-break Zone and Its Controls on Lithologic Traps of Southwestern Area of Qaidam Basin

..... XIAO Chuan-tao, SHUAI Song-qing, WU Guang-da(27)

Quantitative Study on Fractal Characteristics of the Structure of CBM Reservoir

..... YANG Yu, SUN Han-sen, PENG Xiao-dong, LI Jun, PENG Shao-tao(31)

Diagenetic Facies of Xu Member II of Penglai Area of Central Sichuan Basin and Its Influences on Reservoir Pore Structure

..... LAI Jin, WANG Gui-wen(34)

Sedimentary Characteristics of Tight Sand Reservoirs of Badaowan Formation of Baka Oilfield WU Jun-hong(39)

Study on the Technologies of Identification and Delicate Description of Low Level Faults

..... LIU Xian-tai, LI Jun, WANG Jun, HAN Shuang, ZHANG Jun-hua(44)

Paleostructure Restoration and Its Geological Significance of Southeast of Ordos Basin

..... ZHU Ding-wei, DING Wen-long, YOU Sheng-gang, DENG Li-hua, BIAN Wen-jie(48)

Reservoir Engineering

Production Performance Analyses of Low Permeability Fractured Reservoirs

..... JIANG Rui-zhong, YANG Ming, WANG Gong-chang, XU Jian-chun, WANG Rui-heng(52)

Development and Application of Integral Fracturing Software in Complex Conditions

..... CHENG Yuan-fang, LIU Yu-chuan, YU Hao-bo, WANG Yun-tao, DONG Bing-xiang(56)

The Impact of Diagenetic Kaolinite on Steam Injection in Fuyu Oilfield JIANG You-wei, SHEN De-huang, WU Yong-bin(60)

The Establishment and Application of Integrated Evaluation System with Multi-indicators for Development Effect with Horizontal Wells

..... LI Bin, YANG Zhi-peng, BI Yong-bin, LIU Zhen-lin, FANG Meng-zhai(63)

Fractal Analysis of the Influence of Natural Fractures under 2D Conditions on the Fracturing Fractures LI Wei, YAN Tie(67)

Models of Dynamic Permeability Variation of Coal Seam AI Chi, LI Shuang, LI Jing-ran, BAI Lin(71)

Optimization Study on an Injection & Production Well Pattern of a Small Block Reservoir with Right Triangle by Numerical Simulation

..... GUAN Fu-jia, LEI Xiao-li(74)

Study on Production Decline Regularity of fractured Horizontal Wells during the Period of Water Break-through

..... HAO Ming-qiang, LIU Xiong, ZHUANG Yong-tao(77)

Quantitative Characterization of Unit Productivity Heterogeneity of Reservoir Development YAN Ke(80)

Distribution Characteristics and Development Measures of the Residual oil of Block Biqian 10 of Biyang depression XU Bo(83)

Analysis of Factors Influencing Water Blocking Damage in Low-Permeability Sandstone Reservoirs

..... CHEN Peng, WANG Xin-hai, Li Gong-rang, ZHANG Jing-hui, DENG Cheng-qi(89)

Study on the Growing Regularity of a Steam Cavity in Steam Flooding of Block Qi 40 FAN Shi-tong(92)

Simulation Study on Drainage of Oil by Alternative Water and Natural Gas after Water Flooding in Block Lu 2

..... LI Song-lin, ZHANG Yun-hui, ZHAO Jian(95)

Optimization Design of Horizontal Wells in Low Permeability Reservoirs of Block Pu 47 ZHENG Ai-ling, LIU De-hua, SHAO Yan-lin(99)

A New Method to Determine the Rationality of the Straight Line of Water Flooding Curve

..... LIU Ying-xian, REN Xiao-ning, MA Kui-qian, ZHOU Hai-yan(102)

Study on Kinetics of Light Oil under Low Temperature Oxidation

..... WANG Jie-xiang, XIA Jin-na, LIU Shuang-long, WANG Jian-hai, REN Wen-long(105)

The Preparation and Application of Deep Fluid Diversion Agents of Oily Sludge of Henan Oilfield CHEN Yuan(108)

Study on Analogy Theory of Physical Simulation of In-situ Combustion

..... LIU Qi-cheng, CHENG Hai-qing, ZHANG Yong, ZHAO Qing-hui, LIU Bao-liang(111)

The Characteristics of the Displacement of Oil by Water in the Outlet End Pipeline during Heavy Oil Relative Permeability Experiment

..... GAO Wang-lai, SHEN De-huang, LI Fang-fang(115)

Methods of Measuring Relative Permeability Curves with Low Permeability Core Based on CT Scanning

..... LENG Zhen-peng, LV Wei-feng, ZHANG Zu-bo, MA De-sheng, LIU Qing-jie(118)

Solubility Difference for Calculation of Minimum Miscible Pressure for CO₂-Formation Oil System by Using the Solubility Difference Method

..... ZHANG Ke, LI Shi, QIN Ji-shun, MA De-sheng, CHEN Xing-long(122)

Drilling & Production Engineering

Production Technology with Double String in Horizontal Well for Extra Heavy Oil LI Yu-jun, REN Fang-xing(126)

Integral String Technology of Test and Production for Horizontal Wells in Super Deep Reservoirs with High Content of S

..... CHEN Chen, CAO Yang(129)

A New Method to Determine Formation Closure Pressure for the Step-Rate Test in Hydraulic Fracturing of Coal Bed LI Ting(132)

Numerical Simulation of Water shut-off of Horizontal Wells of Tahe Oilfield - - - LIU Jia, CHENG Lin-song, HUANG Shi-jun, WANG Lei(135)

Water-blocking Technology by Using Foam in a Horizontal Well of a Reservoir with Edge Water

..... LIU Yong-ge, LIU Hui-qing, PANG Zhan-xi, LU Chuan(139)

Other

Study on the Methods of Economic Evaluation for SAGD LIU Bin, YI Wei-rong, LIANG Sheng-lang, WANG Guo-chun(143)

Economic Influence of Hydraulic Fracturing Parameters on Horizontal Wells in Shale Gas Bed

..... LI Qing-hui, CHEN Mian, JIN Yan, ZHAO Fei, JIANG Hai-long(146)