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Gas Engineering Bridging Experience and TechnologyPreprints of the 4th Annual Eastern Regional Meeting of the Society of Petroleum Engineers of AIME, Pittsburgh, Pennsylvania, November 2-3, 1967Preprints of the 1st Annual Eastern Regional Meeting of the Society of Petroleum Engineers of AIME, Pittsburgh, Pennsylvania, November 5-6, 1964Proceedings, SPE Eastern Regional MeetingProceedingsSPE Eastern Regional MeetingSPE Eastern Regional MeetingProceedings [of the] 1998 Eastern Regional Meeting, Pittsburgh, PA, 9-11 November, 1998Doing More with LessShale Analytics

Sustainable Natural Gas Reservoir and Production Engineering, the latest release in The Fundamentals and Sustainable Advances in Natural Gas Science and Engineering series, delivers many of the scientific fundamentals needed in the natural gas industry, including improving gas recovery, simulation processes for fracturing methods, and methods for optimizing production strategies. Advanced research covered includes machine learning applications, gas fracturing mechanics aimed at reducing environmental impact, and enhanced oil recovery technologies aimed at capturing carbon dioxide. Supported by corporate and academic contributors along with two well-distinguished editors, this book provides today ' s natural gas engineers the fundamentals and advances in a convenient resource Helps readers advance from basic equations used in conventional gas reservoirs Presents structured case studies to illustrate how new principles can be applied in practical situations Covers advanced topics, including machine learning applications to optimize predictions, controls and improve knowledge-based applications Helps accelerate emission reductions by teaching gas fracturing mechanics with an aim of reducing environmental impacts and developing enhanced oil recovery technologies that capture carbon dioxide

Energy Research Abstracts John Wiley & Sons

This contributed volume presents a multi-perspective collection of the latest research findings on oil and gas exploration and imparts insight that can greatly assist in understanding field behavior, design of test programs, and design of field operations. With this book, engineers also gain a powerful guide to the most commonly used numerical simulation methods that aid in reservoir modelling. In addition, the contributors explore development of technologies that allow for cost effective oil and gas exploration while minimizing the impact on our water resources, surface and groundwater aquifers, geological stability of impacted areas, air quality, and infrastructure assets such as roads, pipelines, water, and wastewater networks. Easy to understand, the book identifies equipment and procedural problems inherent to oil and gas operations and provides systematic approaches for solving them.

Preprints of the 1st Annual Eastern Regional Meeting of the Society of Petroleum Engineers of AIME, Pittsburgh, Pennsylvania, November 5-6, 1964 AAPG

Your Guide to Effective Groundwater Management Groundwater Assessment, Modeling, and Management discusses a variety of groundwater problems and outlines the solutions needed to sustain surface and ground water resources on a global scale. Contributors from around the world lend their expertise and provide an international perspective on groundwater management. They address the management of groundwater resources and pollution, waste water treatment methods, and the impact of climate change on groundwater and water availability (specifically in arid and semi-arid regions such as India and Africa). Incorporating management with science and modeling, the book covers all areas of groundwater resource assessment, modeling, and management, and combines hands-on applications with relevant theory. For Water Resource Managers and Decision Makers The book describes techniques for the assessment of groundwater potential, pollution, prevention, and remedial measures, and includes a new approach for groundwater modeling based on connections (network theory). Approximately 30 case studies and six hypothetical studies are introduced reflecting a range of themes that include: groundwater basics and the derivation of groundwater flow equations, exploration and assessment, aquifer parameterization, augmentation of aquifer, water and environment, water and agriculture, the role of models and their application, and water management policies and issues. The book describes remote sensing (RS) applications, geographical information systems (GIS), and electrical resistivity methods to delineate groundwater potential zones. It also takes a look at: Inverse modeling (pilot-points method) Simulation optimization models Radionuclide migration studies through mass transport modeling Modeling for mapping groundwater potential Modeling for vertical 2-D and 3-D groundwater flow Groundwater Assessment, Modeling, and Management explores the management of water resources and the impact of climate change on groundwater. Expert contributors provide practical information on hydrologic engineering and groundwater resources management for students, researchers, scientists, and other practicing professionals in environmental engineering, hydrogeology, irrigation, geophysics, and environmental science.

Shale Analytics CRC Press

Fundamentals of Enhanced Oil and Gas Recovery from Conventional and Unconventional Reservoirs delivers the proper foundation on all types of currently utilized and upcoming enhanced oil recovery, including methods used in emerging unconventional reservoirs. Going beyond traditional secondary methods, this reference includes advanced water-based EOR methods which are becoming more popular due to CO2 injection methods used in EOR and methods specific to target shale oil and gas activity. Rounding out with a chapter devoted to optimizing the application and economy of EOR methods, the book brings reservoir and petroleum engineers up-to-speed on the latest studies to apply. Enhanced oil recovery continues to grow in technology, and with ongoing unconventional reservoir activity underway, enhanced oil recovery methods of many kinds will continue to gain in studies and scientific advancements. Reservoir engineers currently have multiple outlets to gain knowledge and are in need of one product go-to reference. Explains enhanced oil recovery methods, focusing specifically on those used for unconventional reservoirs Includes real-world case studies and examples to further illustrate points Creates a practical and theoretical foundation with multiple contributors from various backgrounds Includes a full range of the latest and future methods for enhanced oil recovery, including chemical, waterflooding, CO2 injection and thermal

Fossil Energy Update John Wiley & Sons

This multidisciplinary book covers a wide range of topics addressing critical challenges for advancing the understanding and management of shale oil and shale gas resources. Both fundamental and practical issues are considered. By covering a variety of technical topics, we aim to contribute to building a more integrated perspective to meet major challenges faced by shale resources. Combining complementary techniques and examining multiple sources of data serve to advance our current knowledge about these unconventional reservoirs. The book is a result of interdisciplinary and collaborative work. The content includes contributions authored by active scientists with ample expertise in their fields. Each article was carefully peer-reviewed by researchers, and the editorial process was performed by an experienced team of Senior Editors, Guest Editors, Topic Editors, and Editorial Board Members. The first part is devoted to fundamental topics, mostly investigated on the laboratory scale. The second part elaborates on larger scales (at near-wellbore and field scales). Finally, two related technologies, which could be relevant for shale plays applications, are presented. With this Special Issue, we provide a channel for sharing information and lessons learned collected from different plays and from different disciplines.

Proceedings Springer

Bridging Experience and TechnologyPreprints of the 4th Annual Eastern Regional Meeting of the Society of Petroleum Engineers of AIME, Pittsburgh, Pennsylvania, November 2-3, 1967Preprints of the 1st Annual Eastern Regional Meeting of the Society of Petroleum Engineers of AIME, Pittsburgh, Pennsylvania, November 5-6, 1964Proceedings, SPE Eastern Regional MeetingProceedingsSPE Eastern Regional MeetingSPE Eastern Regional MeetingProceedings [of the] 1998 Eastern Regional Meeting, Pittsburgh, PA, 9-11 November, 1998Doing More with LessShale AnalyticsSpringer

Fundamentals of Enhanced Oil and Gas Recovery from Conventional and Unconventional Reservoirs MDPI

This book describes the application of modern information technology to reservoir modeling and well management in shale. While covering Shale Analytics, it focuses on reservoir modeling and production management of shale plays, since conventional reservoir and production modeling techniques do not perform well in this environment. Topics covered include tools for analysis, predictive modeling and optimization of production from shale in the presence of massive multi-cluster, multi-stage hydraulic fractures. Given the fact that the physics of storage and fluid flow in shale are not well-understood and well-defined, Shale Analytics avoids making simplifying assumptions and concentrates on facts (Hard Data - Field Measurements) to reach conclusions. Also discussed are important insights into understanding completion practices and re-frac candidate selection and design. The flexibility and power of the technique is demonstrated in numerous real-world situations.

Quality requirements of super-duty steels Gulf Professional Publishing

Presents an up-to-date description of current and new hydraulic fracturing processes Details Emerging Technologies such as Fracture Treatment Design, Open Hole Fracturing, Screenless Completions, Sand Control, Fracturing Completions and Productivity Covers Environmental Impact issues including Geological Disturbance; Chemicals used in Fracturing; General Chemicals; Toxic Chemicals; and Air, Water, Land, and Health impacts Provides many process diagrams as well as tables of feedstocks and their respective products

Unconventional Hydrocarbon Resources Gulf Professional Publishing

Geological Carbon Storage Subsurface Seals and Caprock Integrity Seals and caprocks are an essential component of subsurface hydrogeological systems, guiding the movement and entrapment of hydrocarbon and other fluids. Geological Carbon Storage: Subsurface Seals and Caprock Integrity offers a survey of the wealth of recent scientific work on caprock integrity with a focus on the geological controls of permanent and safe carbon dioxide storage, and the commercial deployment of geological carbon storage. Volume highlights include: Low-permeability rock characterization from the pore scale to the core scale Flow and transport properties of low-permeability rocks Fundamentals of fracture generation, self-healing, and permeability Coupled geochemical, transport and geomechanical processes in caprock Analysis of caprock behavior from natural analogues Geochemical and geophysical monitoring techniques of caprock failure and integrity Potential environmental impacts of carbon dioxide migration on groundwater resources Carbon dioxide leakage mitigation and remediation techniques Geological Carbon Storage: Subsurface Seals and Caprock Integrity is an invaluable resource for geoscientists from academic and research institutions with interests in energy and environment-related problems, as well as professionals in the field. Book Review: William R. Green, Patrick Taylor, Sven Treitel, and Moritz Fliedner, (2020), "Reviews," The Leading Edge 39: 214 – 216 Geological Carbon Storage: Subsurface Seals and Caprock Integrity, edited by St é phanie Vialle, Jonathan Ajo-Franklin, and J. William Carey, ISBN 978-1-119-11864-0, 2018, American Geophysical Union and Wiley, 364 p., US$199.95 (print), US$159.99 (eBook). This volume is a part of the AGU/Wiley Geophysical Monograph Series. The editors assembled an international team of earth scientists who present a comprehensive approach to the major problem of placing unwanted and/or hazardous fluids beneath a cap rock seal to be impounded. The compact and informative preface depicts the nature of cap rocks and the problems that may occur over time or with a change in the formation of the cap rock. I have excerpted a quote from the preface that describes the scope of the volume in a concise and thorough matter. " Caprocks can be defined as a rock that prevents the flow of a given fluid at certain temperature, pressure, and chemical conditions. ⋯ A fundamental understanding of these units and of their evolution over time in the context of subsurface carbon storage is still lacking. " This volume describes the scope of current research being conducted on a global scale, with 31 of the 83 authors working outside of the United States. The studies vary but can be generalized as monitoring techniques for cap rock integrity and the consequence of the loss of that integrity. The preface ends by calling out important problems that remain to be answered. These include imaging cap rocks in situ, detecting subsurface leaks before they reach the surface, and remotely examining the state of the cap rock to avert any problems. Chapter 3 describes how newer methods are used to classify shale. These advanced techniques reveal previously unknown microscopic properties that complicate classification. This is an example of the more we know, the more we don't know. A sedimentologic study of the formation of shale (by far the major sedimentary rock and an important rock type) is described in Chapter 4. The authors use diagrammatic examples to illustrate how cap rocks may fail through imperfect seal between the drill and wall rock, capillary action, or a structural defect (fault). Also, the shale pore structures vary in size, and this affects the reservoir. There are descriptions of the pore structure in the Eagle Ford and Marcellus shales and several others. Pore structures are analyzed using state-of-the-art ultra-small-angle X-ray or neutron scattering. They determine that the overall porosity decreases nonlinearly with time. There are examples of cap rock performance under an array of diagnostic laboratory analyses and geologic field examples (e.g., Marcellus Formation). The importance of the sequestration of CO2 and other contaminants highlights the significance of this volume. The previous and following chapters illuminate the life history of the lithologic reservoir seal. I would like to call out Chapter 14 in which the authors illustrate the various mechanisms by which a seal can fail and Chapter 15 in which the authors address the general problems of the effect of CO2 sequestration on the environment. They establish a field test, consisting of a trailer and large tank of fluids with numerous monitoring instruments to replicate the effect of a controlled release of CO2-saturated water into a shallow aquifer. This chapter's extensive list of references will be of interest to petroleum engineers, rock mechanics, and environmentalists. The authors of this volume present a broad view of the underground storage of CO2. Nuclear waste and hydrocarbons are also considered for underground storage. There are laboratory, field, and in situ studies covering nearly all aspects of this problem. I cannot remember a study in which so many different earth science resources were applied to a

single problem. The span of subjects varies from traditional geochemical analysis with the standard and latest methods in infrared and X-ray techniques, chemical and petroleum engineering, sedimentary mineralogy, hydrology, and geomechanical studies. This volume is essential to anyone working in this field as it brings several disciplines together to produce a comprehensive study of carbon sequestration. While the volume is well illustrated, there is a lack of color figures. Each chapter should have at least two color figures, or there should be several pages of color figures bound in the center of the volume. Many of the figures would be more meaningful if they had been rendered in color. Also, the acronyms are defined in the individual chapters, but it would be helpful to have a list of acronyms after the extensive index. I recommend this monograph to all earth scientists but especially petroleum engineers, structural geologists, mineralogists, and environmental scientists. Since these chapters cover a broad range of studies, it would be best if the reader has a broad background. — Patrick Taylor Davidsonville, Maryland

Proceedings [of The] SPE Eastern Regional Conference and Exhibition, November 2-4, 1993, Pittsburgh, Pennsylvania Walter de Gruyter GmbH & Co KG

A much-needed, precise and practical treatment of a key topic in the energy industry and beyond, Applied Concepts in Fractured Reservoirs is an invaluable reference for those in both industry and academia Authored by renowned experts in the field, this book covers the understanding, evaluation, and effects of fractures in reservoirs. It offers a comprehensive yet practical discussion and description of natural fractures, their origins, characteristics, and effects on hydrocarbon reservoirs. It starts by introducing the reader to basic definitions and classifications of fractures and fractured reservoirs. It then provides an outline for fractured-reservoir characterization and analysis, and goes on to introduce the way fractures impact operational activities. Well organized and clearly illustrated throughout, Applied Concepts in Fractured Reservoirs starts with a section on understanding natural fractures. It looks at the different types, their dimensions, and the mechanics of fracturing rock in extension and shear. The next section provides information on measuring and analyzing fractures in reservoirs. It covers: logging core for fractures; taking, measuring, and analyzing fracture data; new core vs. archived core; CT scans; comparing fracture data from outcrops, core, and logs; and more. The last part examines the effects of natural fractures on reservoirs, including: the permeability behavior of individual fractures and fracture systems; fracture volumetrics; effects of fractures on drilling and coring; and the interaction between natural and hydraulic fractures. Teaches readers to understand and evaluate fractures Compiles and synthesizes various concepts and descriptions scattered in literature and synthesizes them with unpublished oil-field observations and data, along with the authors ' own experience Bridges some of the gaps between reservoir engineers and geologists Provides an invaluable reference for geologists and engineers who need to understand naturally fractured reservoirs in order to efficiently extract hydrocarbons Illustrated in full color throughout Companion volume to the Atlas of Natural and Induced Fractures in Core

Electron Microscopy of Shale Hydrocarbon Reservoirs CRC Press

Development of advanced technologies is a critical component in overcoming the looming water crisis. Stressing emerging technologies and strategies that facilitate water sustainability for future generations, the second volume in the two-volume set Sustainable Water Management and Technologies provides current and forthcoming technologies research, development, and applications to help ensure availability of water for all. The book emphasizes emerging nanotechnology, biotechnology, and information technology applications as well as sustainable processes and products to protect the environment and human health, save water and energy, and minimize material use. It also discusses such topics as groundwater transport, protection, and remediation, industrial and wastewater treatment, reuse, and disposal, membrane technology for water purification and desalination, treatment and disposal in unconventional oil and gas development, biodegradation, and bioremediation for soil and water. Stresses emerging technologies and strategies that facilitate water sustainability. Covers a wide array of topics including drinking water, wastewater, and groundwater treatment, protection, and remediation. Discusses oil and gas drilling impacts and pollution prevention, membrane technology for water desalination and purification, biodegradation, and bioremediation for soil and water. Details emerging nanotechnology, biotechnology, and information technology applications, as well as sustainable processes and products.

SPE Eastern Regional Meeting John Wiley & Sons

Shale Oil and Gas Production Processes delivers the basics on current production technologies and the processing and refining of shale oil. Starting with the potential of formations and then proceeding to production and completion, this foundational resource also dives into the chemical and physical nature of the precursor of oil shale, kerogen, to help users understand and optimize its properties in shale. Rounding out with reporting, in situ retorting, refining and environmental aspects, this book gives engineers and managers a strong starting point on how to manage the challenges and processes necessary for the further development of these complex resources. Helps readers grasp current research on production from shale formations, including properties and composition Fill in the gaps between research and practical application, including discussions of existing literature Includes a glossary to help readers fully understand key concepts

Proceedings [of the] 1998 Eastern Regional Meeting, Pittsburgh, PA, 9-11 November, 1998 Springer

A comprehensive textbook presenting techniques for the analysis and characterization of shale plays Significant reserves of hydrocarbons cannot be extracted using conventional methods. Improvements in techniques such as horizontal drilling and hydraulic fracturing have increased access to unconventional hydrocarbon resources, ushering in the " shale boom " and disrupting the energy sector. Unconventional Hydrocarbon Resources: Techniques for Reservoir Engineering Analysis covers the geochemistry, petrophysics, geomechanics, and economics of unconventional shale oil plays. The text uses a step-by-step approach to demonstrate industry-standard workflows for calculating resource volume and optimizing the extraction process. Volume highlights include: Methods for rock and fluid characterization of unconventional shale plays A workflow for analyzing wells with stimulated reservoir volume regions An unconventional approach to understanding of fluid flow through porous media A comprehensive summary of discoveries of massive shale resources worldwide Data from Eagle Ford, Woodford, Wolfcamp, and The Bakken shale plays Examples, homework assignments, projects, and access to supplementary online resources Hands-on teaching materials for use in petroleum engineering software applications The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.

Mechanical Working of Steel, I Gulf Professional Publishing

Hardcover plus DVD

Doing More with Less

Volume 1 deals with the origins of process gases and describes recovery, properties and composition. It covers as well the shale gas, the production from hydrocarbon rich deep shale formations, being one of the most quickly expanding trends in onshore domestic gas exploration. Vol. 2: Composition and Processing of Gas Streams. Vol. 3: Uses of Gas and Effects.

Shale Oil and Shale Gas Resources

Mechanical Working of Steel 1. Proceedings of the Fifth Technical Conference Sponsored by the Mechanical Working and Steel Processing Committee of the Iron and Steel Division, the Metallurgical Society, and the Pittsburgh Section, American Institute of Mining, Metallurgical, and Petroleum Engineers. Pittsburgh, Pennsylvania, January 15-16, 1963

Mechanical Working of Steel

Sustainable Natural Gas Reservoir and Production Engineering

Groundwater Assessment, Modeling, and Management