
Access Free Fundamentals Of Coalbed Methane Reservoir Engineering

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KEY=OF - JANIYAH RORY

FUNDAMENTALS OF COALBED METHANE RESERVOIR ENGINEERING

Pennwell Corporation "This straightforward introduction to coalbed methane gives insight and detail to industry professionals involved with this unique energy resource. Author John Seidle reviews global and U.S. coals and coalbed methane resources, takes the reader through the fundamentals of coal and its importance to coal gas production, and finishes with a discussion of the calculation of probabilistic coalbed methane reserves and pilot philosophy." "In this long-awaited book, Seidle also examines coal deposits as reservoirs, discusses the physics of gas storage in coal and its production, and covers basic equations of mass balance and production rates, negative decline, simulation of coal gas recovery, and enhanced coalbed methane recovery."--Back cover.

RESERVOIR ENGINEERING

THE FUNDAMENTALS, SIMULATION, AND MANAGEMENT OF CONVENTIONAL AND UNCONVENTIONAL RECOVERIES

Gulf Professional Publishing Reservoir Engineering focuses on the fundamental concepts related to the development of conventional and unconventional reservoirs and how these concepts are applied in the oil and gas industry to meet both economic and technical challenges. Written in easy to understand language, the book provides valuable information regarding present-day tools, techniques, and technologies and explains best practices on reservoir management and recovery approaches. Various

reservoir workflow diagrams presented in the book provide a clear direction to meet the challenges of the profession. As most reservoir engineering decisions are based on reservoir simulation, a chapter is devoted to introduce the topic in lucid fashion. The addition of practical field case studies make Reservoir Engineering a valuable resource for reservoir engineers and other professionals in helping them implement a comprehensive plan to produce oil and gas based on reservoir modeling and economic analysis, execute a development plan, conduct reservoir surveillance on a continuous basis, evaluate reservoir performance, and apply corrective actions as necessary. Connects key reservoir fundamentals to modern engineering applications Bridges the conventional methods to the unconventional, showing the differences between the two processes Offers field case studies and workflow diagrams to help the reservoir professional and student develop and sharpen management skills for both conventional and unconventional reservoirs

COAL BED METHANE

THEORY AND APPLICATIONS

Coal Bed Methane: Theories and Applications, Second Edition, captures the full lifecycle of a coal bed methane well and offers petroleum geologists and engineers a single source for a broad range of coal bed methane (CBM) applications. The vast coal resources in the United States continue to produce tremendous amounts of natural gas, contributing to a diverse range of energy assets. This book addresses crucial technical topics, including exploration and evaluation of coal bed reservoirs, hydraulic fracturing of CBM wells, coal seam degasification, and production engineering and processing, among others. The book also covers legal issues and permitting, along with an economic analysis of CBM projects. This new edition includes information on new and established research and applications, making it relevant for field geologists and engineers, as well as students.

FUNDAMENTALS OF APPLIED RESERVOIR ENGINEERING

APPRAISAL, ECONOMICS AND OPTIMIZATION

Gulf Professional Publishing **Fundamentals of Applied Reservoir Engineering** introduces early career reservoir engineers and those in other oil and gas disciplines to the fundamentals of reservoir engineering. Given that modern reservoir engineering is largely centered on numerical computer simulation and that reservoir engineers in the industry will likely spend much of their professional career building and running such simulators, the book aims to encourage the use of simulated models in an appropriate way and exercising good engineering judgment to start the process for any field by using all available methods, both modern simulators and simple numerical models, to gain an understanding of the basic 'dynamics' of the

reservoir -namely what are the major factors that will determine its performance. With the valuable addition of questions and exercises, including online spreadsheets to utilize day-to-day application and bring together the basics of reservoir engineering, coupled with petroleum economics and appraisal and development optimization, **Fundamentals of Applied Reservoir Engineering** will be an invaluable reference to the industry professional who wishes to understand how reservoirs fundamentally work and to how a reservoir engineer starts the performance process. Covers reservoir appraisal, economics, development planning, and optimization to assist reservoir engineers in their decision-making. Provides appendices on enhanced oil recovery, gas well testing, basic fluid thermodynamics, and mathematical operators to enhance comprehension of the book's main topics. Offers online spreadsheets covering well test analysis, material balance, field aggregation and economic indicators to help today's engineer apply reservoir concepts to practical field data applications. Includes coverage on unconventional resources and heavy oil making it relevant for today's worldwide reservoir activity.

DEVELOPMENT OF UNCONVENTIONAL RESERVOIRS

MDPI The need for energy is increasing and but the production from conventional reservoirs is declining quickly. This requires an economically and technically feasible source of energy for the coming years. Among some alternative future energy solutions, the most reasonable source is from unconventional reservoirs. As the name "unconventional" implies, different and challenging approaches are required to characterize and develop these resources. This Special Issue covers some of the technical challenges for developing unconventional energy sources from shale gas/oil, tight gas sand, and coalbed methane.

FUNDAMENTALS OF ENHANCED OIL AND GAS RECOVERY FROM CONVENTIONAL AND UNCONVENTIONAL RESERVOIRS

Gulf Professional Publishing **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

PRINCIPLES OF APPLIED RESERVOIR SIMULATION

Elsevier Simulate reservoirs effectively to extract the maximum oil, gas and profit, with this book and free simulation software on companion web site.

UNCONVENTIONAL RESERVOIR RATE-TRANSIENT ANALYSIS

Gulf Professional Publishing **Unconventional Reservoir Rate-Transient Analysis** provides petroleum engineers and geoscientists with the first comprehensive review of rate-transient analysis (RTA) methods as applied to unconventional reservoirs. Volume One—Fundamentals, Analysis Methods, and Workflow is comprised of five chapters which address key concepts and analysis methods used in RTA. This volume overviews the fundamentals of RTA, as applied to low-permeability oil and gas reservoirs exhibiting simple reservoir and fluid characteristics. Volume Two—Application to Complex Reservoirs, Exploration and Development is comprised of four chapters that demonstrate how RTA can be applied to coalbed methane reservoirs, shale gas reservoirs, and low-permeability/shale reservoirs exhibiting complex behavior such as multiphase flow. Use of RTA to assist exploration and development programs in unconventional reservoirs is also demonstrated. This book will serve as a critical guide for students, academics, and industry professionals interested in applying RTA methods to unconventional reservoirs. Gain a comprehensive review of key concepts and analysis methods used in modern rate-transient analysis (RTA) as applied to low-permeability ("tight") oil and gas reservoirs Improve your RTA methods by providing reservoir/hydraulic fracture properties and hydrocarbon-in-place estimates for unconventional gas and light oil reservoirs exhibiting complex reservoir behaviors Understand the provision of a workflow for confident application of RTA to unconventional reservoirs

ADVANCED RESERVOIR ENGINEERING

Elsevier **Advanced Reservoir Engineering** offers the practicing engineer and engineering student a full description, with worked examples, of all of the kinds of reservoir engineering topics that the engineer will use in day-to-day activities. In an industry where there is often a lack of information, this timely volume gives a comprehensive account of the physics of reservoir engineering, a thorough knowledge of which is essential in the petroleum

industry for the efficient recovery of hydrocarbons. Chapter one deals exclusively with the theory and practice of transient flow analysis and offers a brief but thorough hands-on guide to gas and oil well testing. Chapter two documents water influx models and their practical applications in conducting comprehensive field studies, widely used throughout the industry. Later chapters include unconventional gas reservoirs and the classical adaptations of the material balance equation. * An essential tool for the petroleum and reservoir engineer, offering information not available anywhere else * Introduces the reader to cutting-edge new developments in Type-Curve Analysis, unconventional gas reservoirs, and gas hydrates * Written by two of the industry's best-known and respected reservoir engineers

SUSTAINABLE GEOSCIENCE FOR NATURAL GAS SUBSURFACE SYSTEMS

Gulf Professional Publishing **Sustainable Geoscience for Natural Gas SubSurface Systems** delivers many of the scientific fundamentals needed in the natural gas industry, including coal-seam gas reservoir characterization and fracture analysis modeling for shale and tight gas reservoirs. Advanced research includes machine learning applications for well log and facies analysis, 3D gas property geological modeling, and X-ray CT scanning to reduce environmental hazards. Supported by corporate and academic contributors, along with two well-distinguished editors, the book gives today's natural gas engineers both fundamentals and advances in a convenient resource, with a zero-carbon future in mind. Includes structured case studies to illustrate how new principles can be applied in practical situations Helps readers understand advanced topics, including machine learning applications to optimize predictions, controls and improve knowledge-based applications Provides tactics to accelerate emission reductions Teaches gas fracturing mechanics aimed at reducing environmental impacts, along with enhanced oil recovery technologies that capture carbon dioxide

OCEANIC METHANE HYDRATES

FUNDAMENTALS, TECHNOLOGICAL INNOVATIONS, AND SUSTAINABILITY

Gulf Professional Publishing **Methane hydrates** are still a complicated target for today's oil and gas offshore engineers, particularly the lack of reliable real field test data or obtaining the most recent technology available on the feasibility and challenges surrounding the extraction of methane hydrates. **Oceanic Methane Hydrates** delivers the solid foundation as well as today's advances and challenges that remain. Starting with the fundamental knowledge on gas hydrates, the authors define the origin, estimations, and known exploration and production methods. Historical

and current oil and gas fields and roadmaps containing methane hydrates around the world are also covered to help lay the foundation for the early career engineer. Lab experiments and advancements in numerical reservoir simulations transition the engineer from research to practice with real field-core sampling techniques covered, points on how to choose producible methane hydrate reservoirs, and the importance of emerging technologies. Actual comparable onshore tests from around the world are included to help the engineer gain clarity on field expectations. Rounding out the reference are emerging technologies in all facets of the business including well completion and monitoring, economics aspects to consider, and environmental challenges, particularly methods to reduce the costs of methane hydrate exploration and production techniques. Rounding out a look at future trends, *Oceanic Methane Hydrates* covers both the basics and advances needed for today's engineers to gain the required knowledge needed to tackle this challenging and exciting future energy source. Understand real data and practice examples covering the newest developments of methane hydrate, from chemical, reservoir modelling and production testing Gain worldwide coverage and analysis of the most recent extraction production tests Cover the full range of emerging technologies and environmental sustainability including current regulations and policy outlook

SOLID FUELS TECHNOLOGY AND APPLICATIONS.

MDPI This Special Issue presents the latest state-of-the-art research on solid fuels technology with dedicated, focused research papers. There are a variety of topics to choose from among the seven published re-search works to bring you up to date with the current trends in academia and industry.

PROCESSES IN GEOMEDIA

Springer Nature This book corresponds to the fifth volume of the series focused on Processes in GeoMedia and their research on the dynamic of natural systems, including theoretical and experimental studies of the processes occurring in the earth's bowels, the ocean, and the atmosphere. This volume pays particular attention to geomechanical aspects of the production of hydrocarbons. This fifth volume of Processes in GeoMedia corresponds to the English edition of the journal Processes in GeoMedia, published originally in Russian.

FUNDAMENTALS OF GAS SHALE RESERVOIRS

John Wiley & Sons

FUNDAMENTALS OF PETROLEUM AND PETROCHEMICAL ENGINEERING

CRC Press The supply of petroleum continues to dwindle at an alarming rate, yet it is the source of a range of products- from gasoline and diesel to

plastic, rubber, and synthetic fiber. Critical to the future of this commodity is that we learn to use it more judiciously and efficiently. Fundamentals of Petroleum and Petrochemical Engineering provides a holi

ADVANCED RESERVOIR MANAGEMENT AND ENGINEERING

Gulf Professional Publishing Chapter 1. Fundamentals of Well Testing -- Chapter 2. Decline and Type-Curves Analysis -- Chapter 3. Water Influx -- Chapter 4. Unconventional Gas Reservoirs -- Chapter 5. Performance of Oil Reservoirs -- Chapter 6. Predicting Oil Reservoir Performance -- Chapter 7. Fundamentals of Enhanced Oil Recovery -- Chapter 8. Economic Analysis -- Chapter 9. Analysis of Fixed Capital Investments -- Chapter 10. Advanced Evaluation Approaches -- Chapter 11. Professionalism and Ethics.

ENERGY RESOURCES AND SYSTEMS

VOLUME 1: FUNDAMENTALS AND NON-RENEWABLE RESOURCES

Springer Science & Business Media In the lifetimes of the authors, the world and especially the United States have received three significant “wake-up calls” on energy production and consumption. The first of these occurred on October 15, 1973 when the Yom Kippur War began with an attack by Syria and Egypt on Israel. The United States and many western countries supported Israel. Because of the western support of Israel, several Arab oil exporting nations imposed an oil embargo on the west. These nations withheld five million barrels of oil per day. Other countries made up about one million barrels of oil per day but the net loss of four million barrels of oil production per day extended through March of 1974. This represented 7% of the free world’s (i. e. , excluding the USSR) oil production. In 1972 the price of crude oil was about \$3. 00 per barrel and by the end of 1974 the price of oil had risen by a factor of 4 to over \$12. 00. This resulted in one of the worst recessions in the post World War II era. As a result, there was a movement in the United States to become energy independent. At that time the United States imported about one third of its oil (about five million barrels per day). After the embargo was lifted, the world chose to ignore the “wake-up call” and went on with business as usual.

FORMATION DAMAGE DURING IMPROVED OIL RECOVERY

FUNDAMENTALS AND APPLICATIONS

Gulf Professional Publishing Formation Damage during Improved Oil Recovery: Fundamentals and Applications bridges the gap between theoretical knowledge and field practice by presenting information on formation damage issues that arise during enhanced oil recovery. Multi-contributed technical chapters include sections on modeling and simulation, lab experiments, field case studies, and newly proposed technologies and methods that are related to formation damage during secondary and tertiary recovery processes in both conventional and unconventional

reservoirs. Focusing on both the fundamental theories related to EOR and formation damage, this reference helps engineers formulate integrated and systematic designs for applying EOR processes while also considering formation damage issues. Presents the first complete reference addressing formation damage as a result of enhanced oil recovery Provides the mechanisms for formation damage issues that are coupled with EOR Suggests appropriate preventative actions or responses Delivers a structured approach on how to understand the fundamental theories, practical challenges and solutions

SUSTAINABLE NATURAL GAS RESERVOIR AND PRODUCTION ENGINEERING

Gulf Professional Publishing **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

FROM FUNDAMENTALS TO APPLICATIONS IN GEOTECHNICS

PROCEEDINGS OF THE 15TH PAN-AMERICAN CONFERENCE ON SOIL MECHANICS AND GEOTECHNICAL ENGINEERING, 15 - 18 NOVEMBER 2015, BUENOS AIRES, ARGENTINA

IOS Press **The work of geotechnical engineers contributes to the creation of safe, economic and pleasant spaces to live, work and relax all over the world. Advances are constantly being made, and the expertise of the profession becomes ever more important with the increased pressure on space and resources. This book presents the proceedings of the 15th Pan-American Conference on Soil Mechanics and Geotechnical Engineering (XV PCSMGE), held in Buenos Aires, Argentina, in November 2015. This conference, held every four years, is an important opportunity for**

international experts, researchers, academics, professionals and geo-engineering companies to meet and exchange ideas and research findings in the areas of soil mechanics, rock mechanics, and their applications in civil, mining and environmental engineering. The articles are divided into nine sections: transportation geotechnics; in-situ testing; geo-engineering for energy and sustainability; numerical modeling in geotechnics; foundations and ground improvement; unsaturated soil behavior; embankments, dams and tailings; excavations and tunnels; and geo-risks, and cover a wide spectrum of issues from fundamentals to applications in geotechnics. This book will undoubtedly represent an essential reference for academics, researchers and practitioners in the field of soil mechanics and geotechnical engineering. In this proceedings, approximately 65% of the contributions are in English, and 35% of the contributions are in Spanish or Portuguese.

SUSTAINABLE ENERGY AND ENVIRONMENT

AN EARTH SYSTEM APPROACH

CRC Press Here is a comprehensive introductory discussion of Earth, energy, and the environment in an integrated manner that will lead to an appreciation of our complex planet. The book looks at Earth from the perspective of a livable planet and elaborates on the surface and subsurface processes and the various energy cycles where energy is transformed and stored in the planet's various spheres. The chapters discuss the interactions between the different parts of Earth—how energy is exchanged between the atmosphere, hydrosphere, biosphere, and geosphere, and how they impact the environment in which we live.

RESERVOIR FORMATION DAMAGE

FUNDAMENTALS, MODELING, ASSESSMENT, AND MITIGATION

Gulf Professional Publishing Reservoir formation damage continues to be a daily challenge for production and reservoir engineers, and they need to be up to speed on the latest treatment and mitigation options. Reservoir Formation Damage, Fourth Edition gives engineers a structured layout to predict and improve productivity, providing strategies, recent developments and methods for more successful operations. Updated with many new chapters including completion damage effects particularly for fractured wells, flow assurance, and fluid damage effects help engineers better tackle today's assets. Additional new chapters include bacterial induced formation damage, new aspects of chemically induced formation damage, and new field application designs and cost assessments for measures and strategies. Additional procedures for unconventional reservoirs get the engineer up to date. Structured to progress through your career, Reservoir Formation Damage, Fourth Edition continues to deliver a trusted source for the petroleum and reservoir engineer. Learn

with new applications through case studies and test questions Bridge between theory and practice with detailed illustrations and structured progression of chapter topics Consider environmental aspects with new content on water control, conformance, and produced water reinjection

COAL PRODUCTION AND PROCESSING TECHNOLOGY

CRC Press **Coal Production and Processing Technology** provides uniquely comprehensive coverage of the latest coal technologies used in everything from mining to greenhouse gas mitigation. Featuring contributions from experts in industry and academia, this book: Discusses coal geology, characterization, beneficiation, combustion, coking, gasification, and liquef

MULTIPHASE FLOW HANDBOOK, SECOND EDITION

CRC Press **The Multiphase Flow Handbook, Second Edition** is a thoroughly updated and reorganized revision of the late Clayton Crowe's work, and provides a detailed look at the basic concepts and the wide range of applications in this important area of thermal/fluids engineering. Revised by the new editors, Efstathios E. (Stathis) Michaelides and John D. Schwarzkopf, the new Second Edition begins with two chapters covering fundamental concepts and methods that pertain to all the types and applications of multiphase flow. The remaining chapters cover the applications and engineering systems that are relevant to all the types of multiphase flow and heat transfer. The twenty-one chapters and several sections of the book include the basic science as well as the contemporary engineering and technological applications of multiphase flow in a comprehensive way that is easy to follow and be understood. The editors created a common set of nomenclature that is used throughout the book, allowing readers to easily compare fundamental theory with currently developing concepts and applications. With contributed chapters from sixty-two leading experts around the world, the **Multiphase Flow Handbook, Second Edition** is an essential reference for all researchers, academics and engineers working with complex thermal and fluid systems.

ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS FOR ENERGY EXPLORATION AND PRODUCTION

John Wiley & Sons **ARTIFICIAL INTELLIGENCE AND DATA ANALYTICS FOR ENERGY EXPLORATION AND PRODUCTION** This groundbreaking new book is written by some of the foremost authorities on the application of data science and artificial intelligence techniques in exploration and production in the energy industry, covering the most comprehensive and updated new processes, concepts, and practical applications in the field. The book provides an in-depth treatment of the foundations of Artificial Intelligence (AI) Machine Learning, and Data Analytics (DA). It also includes many of AI-DA applications in oil and gas reservoirs exploration, development, and production. The book covers the basic technical details on many tools used

in “smart oil fields”. This includes topics such as pattern recognition, neural networks, fuzzy logic, evolutionary computing, expert systems, artificial intelligence machine learning, human-computer interface, natural language processing, data analytics and next-generation visualization. While theoretical details will be kept to the minimum, these topics are introduced from oil and gas applications viewpoints. In this volume, many case histories from the recent applications of intelligent data to a number of different oil and gas problems are highlighted. The applications cover a wide spectrum of practical problems from exploration to drilling and field development to production optimization, artificial lift, and secondary recovery. Also, the authors demonstrate the effectiveness of intelligent data analysis methods in dealing with many oil and gas problems requiring combining machine and human intelligence as well as dealing with linguistic and imprecise data and rules.

COAL MECHANICS

Springer Nature This book focuses on the mechanical properties and permeability of coal, and the gas flow in coal seams. Based on coal permeability models, it establishes different models for coal seam gas, from the linear flow model to the gas-solid coupling flow model. It also provides the theoretical basis for the exploitation and safe production of coal as well as coal seam gas resources. As such, it is a valuable reference for researchers, advanced students and practitioners working in mining engineering and coalbed methane engineering.

RESERVOIR ENGINEERING HANDBOOK

Gulf Professional Publishing Reorganized for easy use, **Reservoir Engineering Handbook, Fourth Edition** provides an up-to-date reference to the tools, techniques, and science for predicting oil reservoir performance even in the most difficult fields. Topics covered in the handbook include: Processes to enhance production Well modification to maximize oil and gas recovery Completion and evaluation of wells, well testing, and well surveys

Reservoir Engineering Handbook, Fourth Edition provides solid information and insight for engineers and students alike on maximizing production from a field in order to obtain the best possible economic return. With this handbook, professionals will find a valuable reference for understanding the key relationships among the different operating variables. Examples contained in this reference demonstrate the performance of processes under forceful conditions through a wide variety of applications. • Fundamental for the advancement of reservoir engineering concepts • Step-by-step field performance calculations • Easy to understand analysis of oil recovery mechanisms • Step-by-step analysis of oil recovery mechanisms • New chapter on fractured reservoirs

GEOLOGICAL CONTROLS FOR GAS HYDRATES AND UNCONVENTIONALS

Elsevier **Geological Controls for Gas Hydrate Formations and Unconventionals** tells the story of unconventional hydrocarbon resources, especially gas hydrates, tight gas, shale gas, liquid-rich shale, and shale oil, to future generations. It presents the most current research in unconventionals, covering structural constituents of continental margins and their role in generating hydrocarbons. Additionally, this book answers basic questions regarding quantifications and characterizations, distributions, modes of occurrence, physical and chemical properties, and more – in essence, all the information that is necessary to improve the models for precision prediction of the enigma of gas hydrates and other unconventionals. Blending geology, geophysics, geomechanics, petrophysics, and reservoir engineering, it explains in simple language the scientific concepts that are necessary to develop geological and reservoir models for unconventionals. Serving as a focal point for geoscientists and engineers conducting research that focuses on reservoir characteristics of unconventionals, **Geological Controls for Gas Hydrate Formations and Unconventionals** is a useful resource for a variety of other specialiststies including physicists, geochemists, exploration geologists, and petroleum and reservoir engineers. It details the key factors for successful exploration and development of unconventional reservoirs including discovery, data evaluation, full-field development, production, and abandonment, along with a vivid description ofn the worldwide occurrence of unconventional hydrocarbons. Includes a range of datasets that provide detailed workflows for geological modeling Presents theoretical and real data analysis from different parts of the world, making its content practical and implementable in a range of gas hydrate exploration and extraction scenarios Features more than 200 figures and illustrations to highlight key concepts

PRACTICAL ONSHORE GAS FIELD ENGINEERING

Gulf Professional Publishing **Practical Onshore Gas Field Engineering** delivers the necessary framework to help engineers understand the needs of the reservoir, including sections on early transmission and during the life of the well. Written from a reservoir perspective, this reference includes methods and equipment from gas reservoirs, covering the gathering stage at the gas facility for transportation and processing. Loaded with real-world case studies and examples, the book offers a variety of different types of gas fields that demonstrate how surface systems can work through each scenario. Users will gain an increased understanding of today's gas system aspects, along with tactics on how to optimize bottom line revenue. As reservoir and production engineers face many challenges in getting gas from the reservoir to the final sales point, especially as a result of the shale boom, a new demand for more facility engineers now

exists in the market. This book addresses new challenges in the market and brings new tactics to the forefront. Presents the full lifecycle of the gas surface facility, from reservoir to gathering and transmission Helps users gain experience through case studies that explain successes and failures on a variety of gas fields, including unconventional and shale Teaches how the surface gas facility system and equipment work individually, and as an integrated system

THE ... COALBED METHANE SYMPOSIUM

PROCEEDINGS

THE PROPERTIES OF PETROLEUM FLUIDS

Pennwell Corporation This edition expands its scope as a conveniently arranged petroleum fluids reference book for the practicing petroleum engineer and an authoritative college text.

RESERVOIR FORMATION DAMAGE

Elsevier **Reservoir Formation Damage, Second edition** is a comprehensive treatise of the theory and modeling of common formation damage problems and is an important guide for research and development, laboratory testing for diagnosis and effective treatment, and tailor-fit-design of optimal strategies for mitigation of reservoir formation damage. The new edition includes field case histories and simulated scenarios demonstrating the consequences of formation damage in petroleum reservoirs Faruk Civan, Ph.D., is an Alumni Chair Professor in the Mewbourne School of Petroleum and Geological Engineering at the University of Oklahoma in Norman. Dr. Civan has received numerous honors and awards, including five distinguished lectureship awards and the 2003 SPE Distinguished Achievement Award for Petroleum Engineering Faculty. Petroleum engineers and managers get critical material on evaluation, prevention, and remediation of formation damage which can save or cost millions in profits from a mechanistic point of view State-of-the-Art knowledge and valuable insights into the nature of processes and operational practices causing formation damage Provides new strategies designed to minimize the impact of and avoid formation damage in petroleum reservoirs with the newest drilling, monitoring, and detection techniques

UNCONVENTIONAL RESERVOIR RATE-TRANSIENT ANALYSIS

Gulf Professional Publishing **Unconventional Reservoir Rate-Transient Analysis: Volume One - Fundamentals, Analysis Methods and Workflow**, provides a long-overdue comprehensive review of RTA methods to help practicing petroleum engineers and geoscientists understand how to confidently apply RTA to tight reservoirs exhibiting single-phase flow of oil and gas. A review of these methods as applied to more complex unconventional

reservoir/fluid types is reserved for Volume Two. Starting with the fundamentals, Volume One provides practitioners with an overview of the basic concepts used in RTA, such as flow-regime identification and application of straight-line analysis, type-curve analysis, and model history-matching approaches that are applicable to low-complexity, tight reservoirs exhibiting single-phase flow of oil and gas. A comprehensive workflow for confident derivation of reservoir/hydraulic fracture property and hydrocarbon-in-place estimates for wells completed in unconventional reservoirs is then introduced. Workflow steps are discussed in detail and illustrated for hydraulically fractured vertical wells and multi-fractured horizontal wells. Supported by many real-world field examples, **Unconventional Reservoir Rate-Transient Analysis: Volume One - Fundamentals, Analysis Methods, and Workflow** supplies today's petroleum engineers and geoscientists with a comprehensive overview of RTA methods as applied to tight reservoirs. **Unconventional Reservoir Rate-Transient Analysis: Volume Two - Application to Complex Reservoirs, Exploration and Development**, bridges a critical knowledge gap to help practicing petroleum engineers and geoscientists understand how RTA methods can be adopted and applied to today's unconventional reservoirs. Advanced topics such as how to modify and apply RTA methods to the unconventional reservoir types of coalbed methane, shale gas, and tight/shale reservoirs exhibiting multiphase flow, hydraulic fracture complexity, and stress sensitivity are addressed. Guidelines on how to improve production forecasting and development planning through the integration of RTA with other characterization methods are provided. Finally, nontraditional applications of RTA methods to exploration and development are illustrated. **Unconventional Reservoir Rate-Transient Analysis: Volume Two - Application to Complex Reservoirs, Exploration and Development** is an indispensable resource for students, academics, and industry professionals interested in using RTA for evaluating unconventional reservoirs. **Volume One: Comprehensive review of key concepts and analysis methods used in modern rate-transient analysis (RTA) as applied to low-permeability ("tight") oil and gas reservoirs** Provision of a workflow for confident derivation of reservoir/hydraulic fracture properties and hydrocarbon-in-place estimates for wells completed in unconventional reservoirs Detailed discussion and illustration of each step of the workflow using field examples **Volume Two: Improved rate-transient analysis (RTA) methods for providing reservoir/hydraulic fracture properties and hydrocarbon-in-place estimates for unconventional gas and light oil reservoirs exhibiting complex reservoir behaviors** Overview of the application of RTA methods to coalbed methane (CBM), shale gas (SG), and tight/shale reservoirs exhibiting multiphase flow Illustration of nontraditional applications of RTA for exploration and development

FUNDAMENTALS OF RESERVOIR ROCK PROPERTIES

Springer Nature This book explains the basic technologies, concepts, approaches, and terms used in relation to reservoir rocks. Accessible to engineers in varying roles, it provides the tools necessary for building reservoir characterization and simulation models that improve resource definition and recovery, even in complex depositional environments. The book is enriched with numerous examples from a wide variety of applications, to help readers understand the topics. It also describes in detail the key relationships between the different rock properties and their variables. As such, it is of interest to researchers, engineers, lab technicians, and postgraduate students in the field of petroleum engineering.

ENERGY RESOURCES AND SYSTEMS

VOLUME 1: FUNDAMENTALS AND NON-RENEWABLE RESOURCES

Springer Science & Business Media In the lifetimes of the authors, the world and especially the United States have received three significant “wake-up calls” on energy production and consumption. The first of these occurred on October 15, 1973 when the Yom Kippur War began with an attack by Syria and Egypt on Israel. The United States and many western countries supported Israel. Because of the western support of Israel, several Arab oil exporting nations imposed an oil embargo on the west. These nations withheld five million barrels of oil per day. Other countries made up about one million barrels of oil per day but the net loss of four million barrels of oil production per day extended through March of 1974. This represented 7% of the free world’s (i. e. , excluding the USSR) oil production. In 1972 the price of crude oil was about \$3. 00 per barrel and by the end of 1974 the price of oil had risen by a factor of 4 to over \$12. 00. This resulted in one of the worst recessions in the post World War II era. As a result, there was a movement in the United States to become energy independent. At that time the United States imported about one third of its oil (about five million barrels per day). After the embargo was lifted, the world chose to ignore the “wake-up call” and went on with business as usual.

CARBON DIOXIDE SEQUESTRATION IN GEOLOGICAL MEDIA

STATE OF THE SCIENCE, AAPG STUDIES IN GEOLOGY 59

AAPG Over the past 20 years, the concept of storing or permanently storing carbon dioxide in geological media has gained increasing attention as part of the important technology option of carbon capture and storage within a portfolio of options aimed at reducing anthropogenic emissions of greenhouse gases to the earths atmosphere. This book is structured into eight parts, and, among other topics, provides an overview of the current status and challenges of the science, regional assessment studies of

carbon dioxide geological sequestration potential, and a discussion of the economics and regulatory aspects of carbon dioxide sequestration.

UNCONVENTIONAL OIL AND GAS RESOURCES

EXPLOITATION AND DEVELOPMENT

CRC Press As the shale revolution continues in North America, unconventional resource markets are emerging on every continent. In the next eight to ten years, more than 100,000 wells and one- to two-million hydraulic fracturing stages could be executed, resulting in close to one trillion dollars in industry spending. This growth has prompted professionals experienced in conventional oil and gas exploitation and development to acquire practical knowledge of the unconventional realm. **Unconventional Oil and Gas Resources: Exploitation and Development** provides a comprehensive understanding of the latest advances in the exploitation and development of unconventional resources. With an emphasis on shale, this book: Addresses all aspects of the exploitation and development process, from data mining and accounting to drilling, completion, stimulation, production, and environmental issues Offers in-depth coverage of sub-surface measurements (geological, geophysical, petrophysical, geochemical, and geomechanical) and their interpretation Discusses the use of microseismic, fiber optic, and tracer reservoir monitoring technologies and JewelSuite™ reservoir modeling software Presents the viewpoints of internationally respected experts and researchers from leading exploration and production (E&P) companies and academic institutions Explores future trends in reservoir technologies for unconventional resources development **Unconventional Oil and Gas Resources: Exploitation and Development** aids geologists, geophysicists, petrophysicists, geomechanic specialists, and drilling, completion, stimulation, production, and reservoir engineers in the environmentally safe exploitation and development of unconventional resources like shale.

CO₂ STORAGE IN CARBONIFEROUS FORMATIONS AND ABANDONED COAL MINES

CRC Press Underground geological storage of carbon dioxide (CO₂) has considerable potential for mitigating climate change. CO₂ can be safely injected and stored at well characterized and properly managed sites. Injecting carbon dioxide in deep geological formations can store it underground for long periods of time. Depleted oil and gas reservoirs, saline aquifers and carboniferous formations can be used for storage of CO₂, as well as in abandoned coal mines. At depths below about 800-1000m, CO₂ has a liquid-like density that permits the efficient use of underground reservoirs in porous sedimentary rocks. The papers in the present volume are from leading experts in the field of CO₂ storage and were presented at an International Workshop on CO₂ Storage in

Carboniferous Formations and Abandoned Coal Mines (Beijing, China, 8-9 January 2011). CO₂ storage in abandoned coal mines appears to have a bright future. Although CO₂ Storage in Carboniferous Formations and Abandoned Coal Mines is primarily intended for mining engineers, environmental engineers and engineering geologists, the book will also be useful to civil engineers, and academics and professionals in geophysics and geochemistry.

SPE RESERVOIR EVALUATION & ENGINEERING

PETROLEUM ENGINEERING HANDBOOK

Volume I, General Engineering, includes chapters on mathematics, fluid properties (fluid sampling techniques; properties and correlations of oil, gas, condensate, and water; hydrocarbon phase behavior and phase diagrams for hydrocarbon systems; the phasebehavior of water/hydrocarbon systems; and the properties of waxes, asphaltenes, and crude oil emulsions), rock properties (bulk rock properties, permeability, relative permeability, and capillary pressure), the economic and regulatory environment, and the role of fossil energy in the 21st century energy mix (from SPE Website).