

## Spe Petroleum Engineering Handbook Free

Petroleum Production Engineering, A Computer-Assisted Approach  
Fundamentals of Reservoir Engineering  
Hydraulic Fracturing  
Offshore Pipelines  
Reservoir Engineering Handbook  
Khanna's Objective Questions in Petroleum Engineering  
The Petroleum Engineering Handbook: Sustainable Operations  
Dictionary of Oil, Gas, and Petrochemical Processing  
Petroleum Rock Mechanics  
Petroleum Engineering Handbook for the Practicing Engineer  
SPE Petroleum Engineering Certification and PE License Exam Reference Guide  
Fundamentals of Enhanced Oil Recovery Methods for Unconventional Oil Reservoirs  
Petroleum Engineering Handbook  
Formulas and Calculations for Petroleum Engineering  
Fundamental Principles of Reservoir Engineering  
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Solids in Oil and Gas Production  
Oil and Gas Production Handbook: An Introduction to Oil and Gas Production  
Unconventional Oil and Gas Resources Handbook  
Petroleum Engineering Guidebook  
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Drilling Engineering Handbook  
Cementing  
Applied Drilling Engineering  
The Design Engineering Aspects of Waterflooding  
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### **Petroleum Production Engineering, A Computer-Assisted Approach**

PVT properties are necessary for reservoir/well performance forecast and optimization. In absence of PVT laboratory measurements, finding the right correlation to estimate accurate PVT properties could be challenging. PVT Property Correlations: Selection and Estimation discusses techniques to properly calculate PVT properties from limited information. This book covers how to prepare PVT properties for dry gases, wet gases, gas condensates, volatile oils, black oils, and low gas-oil ratio oils. It also explains the use of artificial neural network models in generating PVT properties. It presents numerous examples to explain step-by-step procedures in using techniques designed to deliver the most accurate PVT properties from correlations. Complimentary to this book is PVT correlation calculator software. Many of the techniques discussed in this book are available with the software. This book shows the importance of PVT data, provides practical tools to calculate PVT properties, and helps engineers select PVT correlations so they can model, optimize, and forecast their assets. Understand how to prepare PVT data in absence of laboratory reports for all fluid types Become equipped with a comprehensive list of PVT correlations and their applicability ranges Learn about ANN models and their applications in providing PVT data Become proficient in selecting best correlations and improving correlations results

## **Fundamentals of Reservoir Engineering**

"Volume IV, Production operations engineering" provides readers with up-to-date information on design, equipment selection, and operation procedures for most oil and gas wells. Chapters cover three main topic areas: well completions, problems caused by formation damage, and artificial lift--a major concern for production engineers.

## **Hydraulic Fracturing**

Hydraulic Fracturing in Unconventional Reservoirs: Theories, Operations, and Economic Analysis, Second Edition, presents the latest operations and applications in all facets of fracturing. Enhanced to include today's newest technologies, such as machine learning and the monitoring of field performance using pressure and rate transient analysis, this reference gives engineers the full spectrum of information needed to run unconventional field developments. Covering key aspects, including fracture clean-up, expanded material on refracturing, and a discussion on economic analysis in unconventional reservoirs, this book keeps today's petroleum engineers updated on the critical aspects of unconventional activity. Helps readers understand drilling and production technology and operations in shale gas through real-field examples Covers various topics on fractured wells and the exploitation of unconventional hydrocarbons in one complete reference Presents the latest operations and applications in all facets of fracturing

## **Offshore Pipelines**

Intelligent Digital Oil and Gas Fields: Concepts, Collaboration, and Right-time Decisions delivers to the reader a roadmap through the fast-paced changes in the digital oil field landscape of technology in the form of new sensors, well mechanics such as downhole valves, data analytics and models for dealing with a barrage of data, and changes in the way professionals collaborate on decisions. The book introduces the new age of digital oil and gas technology and process components and provides a backdrop to the value and experience industry has achieved from these in the last few years. The book then takes the reader on a journey first at a well level through instrumentation and measurement for real-time data acquisition, and then provides practical information on analytics on the real-time data. Artificial intelligence techniques provide insights from the data. The road then travels to the "integrated asset" by detailing how companies utilize Integrated Asset Models to manage assets (reservoirs) within DOF context. From model to practice, new ways to operate smart wells enable optimizing the asset. Intelligent Digital Oil and Gas Fields is packed with examples and lessons learned from various case studies and provides extensive references for further reading and a final chapter on the "next generation digital oil field," e.g., cloud computing, big data analytics and advances in nanotechnology. This book is a reference that can help managers, engineers, operations, and IT experts understand specifics on how to filter data to create useful information,

address analytics, and link workflows across the production value chain enabling teams to make better decisions with a higher degree of certainty and reduced risk. Covers multiple examples and lessons learned from a variety of reservoirs from around the world and production situations Includes techniques on change management and collaboration Delivers real and readily applicable knowledge on technical equipment, workflows and data challenges such as acquisition and quality control that make up the digital oil and gas field solutions of today Describes collaborative systems and ways of working and how companies are transitioning work force to use the technology and making more optimal decisions

### **Reservoir Engineering Handbook**

This giant reference, sponsored by the American Gas Association and written by a staff of 150 specialists, answers any general or specific engineering information requirement in regard to natural, liquefied petroleum, and manufactured gases. It presents in concise, orderly fashion all "working" facts and data on fuel gases needed by engineers, industry, and government personnel. The Handbook brings together in one volume and 125 chapters all conceivable engineering methods and operating data of the entire gas industry, from source to burner. Tables, graphs, charts, equations, and illustrations clarify and illuminate a text that is crammed with the kind of information that is virtually unobtainable elsewhere.

### **Khanna's Objective Questions in Petroleum Engineering**

Unconventional Oil and Gas Resources Handbook: Evaluation and Development is a must-have, helpful handbook that brings a wealth of information to engineers and geoscientists. Bridging between subsurface and production, the handbook provides engineers and geoscientists with effective methodology to better define resources and reservoirs. Better reservoir knowledge and innovative technologies are making unconventional resources economically possible, and multidisciplinary approaches in evaluating these resources are critical to successful development. Unconventional Oil and Gas Resources Handbook takes this approach, covering a wide range of topics for developing these resources including exploration, evaluation, drilling, completion, and production. Topics include theory, methodology, and case histories and will help to improve the understanding, integrated evaluation, and effective development of unconventional resources. Presents methods for a full development cycle of unconventional resources, from exploration through production Explores multidisciplinary integrations for evaluation and development of unconventional resources and covers a broad range of reservoir characterization methods and development scenarios Delivers balanced information with multiple contributors from both academia and industry Provides case histories involving geological analysis, geomechanical analysis, reservoir modeling, hydraulic fracturing treatment, microseismic monitoring, well performance and refracturing for development of unconventional reservoirs

## **The Petroleum Engineering Handbook: Sustainable Operations**

### **Dictionary of Oil, Gas, and Petrochemical Processing**

This second of two volumes provides a comprehensive overview of petroleum engineering. Created with the purpose of answering daily questions faced by the practicing petroleum engineer, it is suitable for field and office use.

### **Petroleum Rock Mechanics**

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

### **Petroleum Engineering Handbook for the Practicing Engineer**

Formulas and Calculations for Petroleum Engineering unlocks the capability for any petroleum engineering individual, experienced or not, to solve problems and locate quick answers, eliminating non-productive time spent searching for that right calculation. Enhanced with lab data experiments, practice examples, and a complimentary online software toolbox, the book presents the most convenient and practical reference for all oil and gas phases of a given project. Covering the full spectrum, this reference gives single-point reference to all critical modules, including drilling, production, reservoir engineering, well testing, well logging, enhanced oil recovery, well completion, fracturing, fluid flow, and even petroleum economics. Presents single-point access to all petroleum engineering equations, including calculation of modules covering drilling, completion and fracturing Helps readers understand petroleum economics by including formulas on depreciation rate, cashflow analysis, and the optimum number of development wells

## **SPE Petroleum Engineering Certification and PE License Exam Reference Guide**

As global consumption of fossil fuels such as oil increases, previously abundant sources have become depleted or plagued with obstructions. Asphaltene deposition is one of such obstructions which can significantly decrease the rate of oil production. This book offers concise yet thorough coverage of the complex problem of asphaltene precipitation and deposition in oil production. It covers fundamentals of chemistry, stabilization theories and mechanistic approaches of asphaltene behavior at high temperature and pressure. Asphaltene Deposition: Fundamentals, Prediction, Prevention, and Remediation explains techniques for experimental determination of asphaltene precipitation and deposition and different modeling tools available to forecast the occurrence and magnitude of asphaltene deposition in a given oil field. It discusses strategies for mitigation of asphaltene deposition using chemical inhibition and corresponding challenges, best practices for asphaltene remediation, current research, and case studies.

## **Fundamentals of Enhanced Oil Recovery Methods for Unconventional Oil Reservoirs**

This book deals with complex fluid characterization of oil and gas reservoirs, emphasizing the importance of PVT parameters for practical application in reservoir simulation and management. It covers modeling of PVT parameters, QA/QC of PVT data from lab studies, EOS modeling, PVT simulation and compositional grading and variation. It describes generation of data for reservoir engineering calculations in view of limited and unreliable data and techniques like downhole fluid analysis and photophysics of reservoir fluids. It discusses behavior of unconventional reservoirs, particularly for difficult resources like shale gas, shale oil, coalbed methane, reservoirs, heavy and extra heavy oils.

## **Petroleum Engineering Handbook**

Hydraulic Fracturing effectively busts the myths associated with hydraulic fracturing. It explains how to properly engineer and optimize a hydraulically fractured well by selecting the right materials, evaluating the economic benefits of the project, and ensuring the safety and success of the people, environment, and equipment. From data estimation

## **Formulas and Calculations for Petroleum Engineering**

The job of any reservoir engineer is to maximize production from a field to obtain the best economic return. To do this, the engineer must study the behavior and characteristics of a petroleum reservoir to determine the course of future development and production that will maximize the profit. Fluid flow, rock properties, water and gas coning, and relative permeability are only a few of the concepts that a reservoir engineer must understand to do the job right, and some of the

tools of the trade are water influx calculations, lab tests of reservoir fluids, and oil and gas performance calculations. Two new chapters have been added to the first edition to make this book a complete resource for students and professionals in the petroleum industry: Principles of Waterflooding, Vapor-Liquid Phase Equilibria.

## **Fundamental Principles of Reservoir Engineering**

Low Salinity and Engineered Water Injection for Sandstones and Carbonate Reservoirs provides a first of its kind review of the low salinity and engineered water injection (LSWI/EWI) techniques for today's more complex enhanced oil recovery methods. Reservoir engineers today are challenged in the design and physical mechanisms behind low salinity injection projects, and to date, the research is currently only located in numerous journal locations. This reference helps readers overcome these challenging issues with explanations on models, experiments, mechanism analysis, and field applications involved in low salinity and engineered water. Covering significant laboratory, numerical, and field studies, lessons learned are also highlighted along with key areas for future research in this fast-growing area of the oil and gas industry. After an introduction to its techniques, the initial chapters review the main experimental findings and explore the mechanisms behind the impact of LSWI/EWI on oil recovery. The book then moves on to the critical area of modeling and simulation, discusses the geochemistry of LSWI/EWI processes, and applications of LSWI/EWI techniques in the field, including the authors' own recommendations based on their extensive experience. It is an essential reference for professional reservoir and field engineers, researchers and students working on LSWI/EWI and seeking to apply these methods for increased oil recovery. Teaches users how to understand the various mechanisms contributing to incremental oil recovery using low salinity and engineering water injection (LSWI/EWI) in sandstones and carbonates Balances guidance between designing laboratory experiments, to applying the LSWI/EWI techniques at both pilot-scale and full-field-scale for real-world operations Presents state-of-the-art approaches to simulation and modeling of LSWI/EWI

## **Reservoir Engineering Handbook**

In industry, miscommunication can cause frustration, create downtime, and even trigger equipment failure. By providing a common ground for more effective discourse, the Dictionary of Oil, Gas, and Petrochemical Processing can help eliminate costly miscommunication. An essential resource for oil, gas, and petrochemical industry professionals, engineer

## **Advanced Reservoir Engineering**

The precipitation and deposition of solids are a major challenge in the production of oil and gas. Flow assurance solids are formed because of unavoidable changes in temperature, pressure and composition of the oil-gas-water flowstream, from

reservoir conditions to processing conditions. The advent of subsea production and the increased exploitation of heavy crudes have made flow assurance issues dominant in ensuring efficient and safe exploitation of hydrocarbon assets. Five troublesome flow assurance solids are described in the book: asphaltene, paraffin wax, natural gas hydrate, naphthenate and inorganic scale. These big-five solids are presented in stand-alone chapters. Each chapter is designed to be readable without clutter. Derivations of equations and descriptions of supporting details are given in several appendices. The book is intended for professional engineers and natural scientist working in E&P companies, engineering companies, service companies and specialized companies. An understanding of the big-five solids is required throughout the lifetime of oil and gas assets, from early development to abandonment. The technical, safety and environmental risks associated with deposition problems in near-wellbore formations, production tubing, wellhead equipment, flowlines and processing facilities, are relevant for decisions in the oil and gas industry and in outside regulatory and financial entities.

## **Standard Handbook of Petroleum and Natural Gas Engineering:**

### **Hydraulic Fracturing in Unconventional Reservoirs**

"This book is fast becoming the standard text in its field", wrote a reviewer in the Journal of Canadian Petroleum Technology soon after the first appearance of Dake's book. This prediction quickly came true: it has become the standard text and has been reprinted many times. The author's aim - to provide students and teachers with a coherent account of the basic physics of reservoir engineering - has been most successfully achieved. No prior knowledge of reservoir engineering is necessary. The material is dealt with in a concise, unified and applied manner, and only the simplest and most straightforward mathematical techniques are used. This low-priced paperback edition will continue to be an invaluable teaching aid for years to come.

### **Intelligent Digital Oil and Gas Fields**

This book presents the fundamental principles of drilling engineering, with the primary objective of making a good well using data that can be properly evaluated through geology, reservoir engineering, and management. It is written to assist the geologist, drilling engineer, reservoir engineer, and manager in performing their assignments. The topics are introduced at a level that should give a good basic understanding of the subject and encourage further investigation of specialized interests. Many organizations have separate departments, each performing certain functions that can be done by several methods. The reentering of old areas, as the industry is doing today, particularly emphasizes the necessity of good holes, logs, casing design, and cement job. Proper planning and coordination can eliminate many mistakes, and I hope the topics

discussed in this book will play a small part in the drilling of better wells. This book was developed using notes, comments, and ideas from a course I teach called "Drilling Engineering with Offshore Considerations." Some "rules of thumb" equations are used throughout, which have proven to be helpful when applied in the proper perspective. The topics are presented in the proper order for carrying through the drilling of a well.

### **Flow Assurance Solids in Oil and Gas Production**

The Petroleum Engineering Guidebook is a clearly written overview of petroleum engineering. Published in 2018, it has many updates and improvement from the original draft the author used to pass the PE Exam in 2015. It is a concise yet complete guide, and can be effectively used in industry and as registration study guide. As many prior users attest: there is simply no other text like it.

### **Oil and Gas Production Handbook: An Introduction to Oil and Gas Production**

### **Unconventional Oil and Gas Resources Handbook**

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.

### **Petroleum Engineering Guidebook**

Pt. 1. Fundamentals of solid mechanics -- pt. 2. Petroleum rock mechanics.



## **Gas Engineers Handbook**

### **Petroleum Engineering**

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

### **Asphaltene Deposition**

Offshore Pipelines covers the full scope of pipeline development from pipeline designing, installing, and testing to operating. It gathers the authors' experiences gained through years of designing, installing, testing, and operating submarine pipelines. The aim is to provide engineers and management personnel a guideline to achieve cost-effective management in their offshore and deepwater pipeline development and operations. The book is organized into three parts. Part I presents design practices used in developing submarine oil and gas pipelines and risers. Contents of this part include selection of pipe size, coating, and insulation. Part II provides guidelines for pipeline installations. It focuses on controlling bending stresses and pipe stability during laying pipelines. Part III deals with problems that occur during pipeline operations. Topics covered include pipeline testing and commissioning, flow assurance engineering, and pigging operations. This book is written primarily for new and experienced engineers and management personnel who work on oil and gas pipelines in offshore and deepwater. It can also be used as a reference for college students of undergraduate and graduate levels in Ocean Engineering, Mechanical Engineering, and Petroleum Engineering. \* Pipeline design engineers will learn how to design low-cost pipelines allowing long-term operability and safety. \* Pipeline operation engineers and management personnel will learn how to operate their pipeline systems in a cost effective manner. \* Deepwater pipelining is a new technology developed in the past ten years and growing quickly.

## **Petroleum Fluid Phase Behavior**

Energy may be the most important factor that will influence the shape of society in the 21st century. The cost and availability of energy significantly impacts our quality of life and the health of national economies. This book examines the energy sources that play a vital role in society.

## **Reservoir Engineering**

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

## **Low Salinity and Engineered Water Injection for Sandstone and Carbonate Reservoirs**

Petroleum Production Engineering, A Computer-Assisted Approach provides handy guidelines to designing, analyzing and optimizing petroleum production systems. Broken into four parts, this book covers the full scope of petroleum production engineering, featuring stepwise calculations and computer-based spreadsheet programs. Part one contains discussions of petroleum production engineering fundamentals, empirical models for production decline analysis, and the performance of oil and natural gas wells. Part two presents principles of designing and selecting the main components of petroleum production systems including: well tubing, separation and dehydration systems, liquid pumps, gas compressors, and pipelines for oil and gas transportation. Part three introduces artificial lift methods, including sucker rod pumping systems, gas lift technology, electrical submersible pumps and other artificial lift systems. Part four is comprised of production enhancement techniques including, identifying well problems, designing acidizing jobs, guidelines to hydraulic fracturing

and job evaluation techniques, and production optimization techniques. \*Provides complete coverage of the latest techniques used for designing and analyzing petroleum production systems \*Increases efficiency and addresses common problems by utilizing the computer-based solutions discussed within the book \* Presents principles of designing and selecting the main components of petroleum production systems

### **PVT Property Correlations**

### **Petroleum Engineering Handbook**

In this book, an attempt has been made by the author to present numerous important questions with answers which have been methodically prepared/selected from different text books, manuals of petroleum industries, SPE technical papers and teaching materials of distinguished persons. These questions are very relevant for promoting fundamental understanding of petroleum engineering and will be primarily useful for fresh graduates of petroleum engineering who can prepare themselves soundly for both written as well as oral examinations.

### **Reservoir Formation Damage**

The need for this book has arisen from demand for a current text from our students in Petroleum Engineering at Imperial College and from post-experience Short Course students. It is, however, hoped that the material will also be of more general use to practising petroleum engineers and those wishing for an introduction into the specialist literature. The book is arranged to provide both background and overview into many facets of petroleum engineering, particularly as practised in the offshore environments of North West Europe. The material is largely based on the authors' experience as teachers and consultants and is supplemented by worked problems where they are believed to enhance understanding. The authors would like to express their sincere thanks and appreciation to all the people who have helped in the preparation of this book by technical comment and discussion and by giving permission to reproduce material. In particular we would like to thank our present colleagues and students at Imperial College and at ERC Energy Resource Consultants Ltd. for their stimulating company, Jill and Janel for typing seemingly endless manuscripts; Dan Smith at Graham and Trotman Ltd. for his perseverance and optimism; and Lesley and Joan for believing that one day things would return to normality. John S. Archer and Colin G. Wall 1986 ix Foreword Petroleum engineering has developed as an area of study only over the present century. It now provides the technical basis for the exploitation of petroleum fluids in subsurface sedimentary rock reservoirs.

### **Energy in the 21st Century**

## **Drilling Engineering Handbook**

### **Cementing**

### **Applied Drilling Engineering**

### **The Design Engineering Aspects of Waterflooding**

Petroleum engineering now has its own true classic handbook that reflects the profession's status as a mature major engineering discipline. Formerly titled the Practical Petroleum Engineer's Handbook, by Joseph Zaba and W.T. Doherty (editors), this new, completely updated two-volume set is expanded and revised to give petroleum engineers a comprehensive source of industry standards and engineering practices. It is packed with the key, practical information and data that petroleum engineers rely upon daily. The result of a fifteen-year effort, this handbook covers the gamut of oil and gas engineering topics to provide a reliable source of engineering and reference information for analyzing and solving problems. It also reflects the growing role of natural gas in industrial development by integrating natural gas topics throughout both volumes. More than a dozen leading industry experts-academia and industry-contributed to this two-volume set to provide the best , most comprehensive source of petroleum engineering information available.

### **Gas Reservoir Engineering**

Fundamentals of Enhanced Oil Recovery Methods for Unconventional Oil Reservoirs, Volume 67 provides important guidance on which EOR methods work in shale and tight oil reservoirs. This book helps readers learn the main fluid and rock properties of shale and tight reservoirs—which are the main target for EOR techniques—and understand the physical and chemical mechanisms for the injected EOR fluids to enhance oil recovery in shale and tight oil reservoirs. The book explains the effects of complex hydraulic fractures and natural fractures on the performance of each EOR technique. The book describes the parameters affecting obtained oil recovery by injecting different EOR methods in both the microscopic and macroscopic levels of ULR. This book also provides proxy models to associate the functionality of the improved oil recovery by injecting different EOR methods with different operating parameters, rock, and fluid properties. The book provides

profesasonals working in the petroleum industry the know-how to conduct a successful project for different EOR methods in shale plays, while it also helps academics and students in understanding the basics and principles that make the performance of EOR methods so different in conventional reservoirs and unconventional formations. Provides a general workflow for how to conduct a successful project for different EOR methods in these shale plays Provides general guidelines for how to select the best EOR method according to the reservoir characteristics and wells stimulation criteria Explains the basics and principles that make the performance of EOR methods so different in conventional reservoirs versus unconventional formations

### **Fundamentals of Drilling Engineering**

This is the first book in the petroleum sector that sheds light on the real obstacles to sustainable development and provides solutions to each problem encountered. Each solution is complete with an economic analysis that clarifies why petroleum operations can continue with even greater profit than before while ensuring that the negative environmental impact is diminished. The new screening tools and models proposed in this book will provide one with proper guidelines to achieve true sustainability in both technology development and management of the petroleum sector.

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