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Nota di contenuto	front cover; copyright; dedication; table of contents; front matter; Preface to the Third Edition; A Word About Standardized Notation and Units; Acknowledgements; About the Author; Website - Software; body; Chapter 1 Introduction to Reservoir Management; 1.1 Consensus Modeling; 1.2 Management of Simulation Studies; 1.3 "Hands-On" Simulation; 1.4 Outline of the Text; Chapter 1 Exercises; Chapter 2 Basic Reservoir Analysis; 2.1 Volumetrics; 2.2 IFLO Volumetrics; 2.3 Material Balance; 2.3.1 Oil Reservoir Material Balance; 2.3.2 Gas Reservoir Material Balance; 2.4 Decline Curve Analysis 2.5 IFLO Application: Depletion of a Gas Reservoir Chapter 2 Exercises; Chapter 3 Multiphase Flow Concepts; 3.1 Basic Concepts; 3.1.1 Interfacial Tension; 3.1.2 Wettability; 3.1.3 Contact Angle; 3.2 Capillary Pressure; 3.2.1 Capillary Pressure Theory; 3.2.2 Capillary Pressure and Pore Radius; 3.2.3 Equivalent Height; 3.2.4 Oil-Water Capillary Pressure; 3.2.5 Gas-Oil Capillary Pressure; 3.2.6 Capillary Pressure Correction; 3.2.7 Leverett's J-Function; 3.3 Relative Permeability; 3.4 Mobility and Fractional Flow; 3.4.1 Mobility; 3.4.2 Mobility Ratio; 3.4.3 Fractional Flow 3.4.4 Simplified Fractional Flow Equation 3.4.5 Fractional Flow Equation

with Gravity; 3.4.6 Gas Fractional Flow; 3.5 Flow Concepts in Naturally Fractured Reservoirs; 3.5.1 Fracture Capillary Pressure; 3.5.2 Fracture Relative Permeability; Chapter 3 Exercises; Chapter 4 Fluid Displacement; 4.1 Buckley-Leverett Theory; 4.1.1 Water Saturation Profile; 4.2 Welge's Method; 4.2.1 Effects of Capillary Pressure and Gravity; 4.3 Miscible Displacement; 4.4 Viscous Fingering; 4.5 IFLO Application: Buckley- Leverett Displacement; Chapter 4 Exercises; Chapter 5 Frontal Stability  
5.1 Frontal Advance Neglecting Gravity 5.2 Frontal Advance Including Gravity; 5.3 Linear Stability Analysis; 5.4 IFLO Application: Frontal Advance in a Dipping Reservoir; Chapter 5 Exercises; Chapter 6 Pattern Floods; 6.1 Recovery Efficiency; 6.2 Patterns and Spacing; 6.3 Advances in Drilling Technology; 6.3.1 Infill Drilling; 6.3.2 Multilateral Wells and Extended Reach Drilling; 6.3.3 Geosteering; 6.3.4 Intelligent Wells; 6.4 Pattern Recovery; 6.5 IFLO Application: Five- Spot Waterflood; 6.6 IFLO Application: Line- Drive Waterflood in a Naturally Fractured Reservoir; Chapter 6 Exercises  
Chapter 7 Recovery of Subsurface Resources 7.1 Production Stages; 7.1.1 Primary Production; 7.1.2 Secondary Production; 7.1.3 Alternative Classifications; 7.2 Enhanced Oil Recovery; 7.2.1 Chemical; 7.2.2 Miscible; 7.2.3 Thermal; 7.2.4 Microbial; 7.3 Unconventional Fossil Fuels; 7.3.1 Coalbed Methane; 7.3.2 Gas Hydrates; 7.3.3 Tight Gas Sands and Shale Gas; 7.3.4 Shale Oil and Tar Sands; 7.4 IFLO Coal Gas Model; 7.4.1 Critical Desorption Pressure; 7.5 IFLO Application: Coal Gas Production from a Fruitland Coal; Chapter 7 Exercises; Chapter 8 Economics and the Environment  
8.1 Society of Petroleum Engineers and World Petroleum Congress Reserves

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## Sommario/riassunto

SHORT BLURB/BRIEF DESCRIPTION: The hottest, most important topic to reservoir engineers is reservoir simulation. Reservoir simulations are literally pictures of what a reservoir of oil or gas looks, or should look, like under the surface of the earth. A multitude of tools is available to the engineer to generate these pictures, and, essentially, the more accurate the picture, the easier the engineer can get the product out of the ground, and, thus, the more profitable the well will be. UNIQUE FEATURE: Completely revised and updated throughout, this new edition of a GPP industry stan

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