1. Record Nr. UNINA9910827067103321

Autore	Mokhatab Saeid
Titolo	Handbook of natural gas transmission and processing / / Saeid Mokhatab
Pubbl/distr/stampa	Amsterdam ; ; Boston, Mass., : Elsevier/Gulf Professional Pub., 2012
ISBN	1-283-71684-4 0-12-386975-7
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (829 p.)
Altri autori (Persone)	PoeWilliam A ZatzmanGary
Disciplina	665.7 665.74
Soggetti	Natural gas Natural gas pipelines Gas manufacture and works
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Handbook of NATURAL GAS TRANSMISSION AND PROCESSING; Copyright; Dedication; Contents; Foreword; Preface to the Second Edition; Authors' Biographical Sketches; Chapter 1: Natural Gas Fundamentals; 1.1. Introduction; 1.2. Natural Gas History; 1.3. Natural Gas Origin and Sources; 1.4. Natural Gas Composition and Classification; 1.5. Natural Gas Phase Behavior; 1.6. Natural Gas Properties; 1.6.1. Chemical and Physical Properties; 1.6.1.1. Gas-Specific Gravity; 1.6.1.2. Gas Compressibility Factor; 1.6.1.3. Gas Formation Volume Factor; 1.6.1.4. Gas Density 1.6.1.5. Isothermal Compressibility of Gases1.6.1.6. Gas Viscosity; 1.6.2. Thermodynamic Properties; 1.6.2.1. Specific Heat; 1.6.2.2. Joule-Thomson Coefficient; 1.7. Natural Gas Reserves; 1.8. Natural Gas Exploration and Production; 1.8.1. Conventional Gas; 1.8.1.1. Exploration; 1.8.1.2. Drilling; 1.8.1.3. Completion; 1.8.1.4. Production; 1.8.2. Unconventional Gas; 1.8.2.1. Exploration; 1.8.2.2. Drilling; 1.8.2.3. Completion; 1.8.2.4. Production; 1.8.3. Well Deliverability; 1.9. Natural Gas Transportation; 1.9.1. Pipelines; 1.9.2. Liquefied Natural Gas (LNG)

1.9.3. Compressed Natural Gas (CNG)1.9.4. Gas-to-Liquids (GTL); 1.9.5. Gas-to-Solid (GTS); 1.9.6. Gas-to-Wire (GTW); 1.9.7. Comparison Between Various Methods; 1.10. Dynamics of Global Gas Business; 1.11 References; Chapter 2: Natural Gas Energy Pricing; 2.1. Introduction; 2.2. Energy Pricing, Supply, and Demand; 2.3. Sustainability and the Increasing Fascination with Natural Gas; 2.4. Is Natural Gas Always ``Nonrenewable ?; 2.5. U.S. Natural Gas: Pricing, Markets, Risk Management, and Supply; 2.5.1. Some Ongoing Features of Natural Gas Pricing in the United States
2.5.2. U.S. Energy Markets: The Regulation-Deregulation Nexus2.5.3. Energy Price Volatility and Derivatives; 2.5.4. Natural Gas Supply in North America; 2.5.4.1. The Special Position of the United States; 2.6. Natural Gas in Eurasia: the Special Position of Post-Soviet Russia; 2.7. Looking to Nature for a New Model; 2.8 References; Chapter 3: Raw Gas Transmission; 3.1. Introduction; 3.2. Multiphase Flow Terminology; 3.2.1. Superficial Velocity; 3.2.2. Mixture Velocity; 3.2.3. Holdup; 3.2.4. Phase Velocity; 3.2.5. Slip; 3.2.6. Mixture Density; 3.2.7. Mixture Viscosity
3.2.8. Mixture Pressure Drop3.2.9. Mixture Enthalpy; 3.3. Multiphase Flow Regimes; 3.3.1. Two-Phase Flow Regimes; 3.3.1.1. Horizontal Flow Regimes; 3.3.1.2. Vertical Flow Regimes; 3.3.1.3. Inclined Flow Regimes; 3.3.1.4. Flow Pattern Maps; 3.3.2. Three-Phase Flow Regimes; 3.3.3. Gas/Condensate Flow Regimes; 3.4. Determining Multiphase Flow Design Parameters; 3.4.1. Steady-State Two-Phase Flow; 3.4.1.1. Single-Phase Flow Approaches; 3.4.1.2. Homogeneous Flow Approaches; 3.4.1.3. Mechanistic Models; 3.4.2. Steady-State Three-Phase Flow; 3.4.3. Transient Multiphase Flow; 3.4.3.1. Two-Fluid Model 3.4.3.2. Drift-Flux Model

Sommario/riassunto

A unique, well-documented, and forward-thinking work, the second edition of Handbook of Natural Gas Transmission and Processing continues to present a thoroughly updated, authoritative, and comprehensive description of all major aspects of natural gas transmission and processing. It provides an ideal platform for engineers, technologists, and operations personnel working in the natural gas industry to get a better understanding of any special requirements for optimal design and operations of natural gas transmission pipelines and processing plants. First book of its kind that c