OMB No. 1817269243936

Btex Removal From Natural Gas Final Report

BTEX(BTX) Measurement in Natural Gas BTEX GAS Natural Gas Dehydration System (Using Glycol) Electrification: How to Remove Natural Gas From Your Home TEG Dehydration: Process Principles and Key Performance Parameters Lecture 44: Acid gas removal in natural gas system - II How to Fix your Water - Removing Methane Gas Dehydration and Glycol Regeneration Unit Condensates Processing: Natural Gas Condensates: A Valuable Component of the Natural Gas Industry Glycol Gas Dehydration System Natural Gas Processing - Part 9 what is LPG - Part.2 - Dehydration Natural Gas Processing - Part 3 Using a Burette | How to remove the air gap! Natural Gas processing - Part 2 Glycol Dehydration Emissions Tool Lean Gas TEG Dehydration Process #1 Best AT HOME Test to Find Clogged Arteries Lecture 43: Acid gas removal in natural gas system - I Bio-methane to replace natural gas in FortisBC system
Fundamentals of Natural Gas Processing
Biofiltration for Air Pollution Control
Proceedings
Natural Gas
Natural Attenuation for Groundwater Remediation
Handbook of Liquefied Natural Gas
Petroleum Industry Wastewater
Sorbents Materials for Controlling Environmental Pollution
Air, Gas, and Water Pollution Control Using Industrial and Agricultural Solid Wastes Adsorbents
Environanotechnology
Encyclopedia of Microbiology
Fundamentals of Natural Gas Processing
Natural Attenuation of Hazardous Wastes
Proceedings
Oil & Gas Produced Water Management
Developments and Applications in Solubility
Air Pollution XXVI
Energy Innovations Small Grant Program

Btex Removal From Natural Gas Final Report *OMB No. 1817269243936 edited by*

DEVIN KIDD

Fundamentals of Natural Gas Processing DIANE Publishing
Offering indispensable insight from experts in the field, Fundamentals of Natural Gas Processing, Second Edition provides an introduction to the gas industry and the processes required to convert wellhead gas into valuable natural gas and hydrocarbon liquids products. The authors compile information from the literature, meeting proceedings, and the
Biofiltration for Air Pollution Control CRC Press
Natural gas as a non-renewable hydrocarbon is used as an energy source for cooking, heating, vehicle fuel, and electricity generation. It is also used as a chemical feedstock in the manufacturing of plastics and organic chemicals. This book brings together new perspectives and future developments in natural gas. Chapters address such topics as adsorbed natural gas, fermentation processes for producing value-added products from natural gas, processes for separating C3+ hydrocarbon from natural gas, natural gas dehydration, and much more.
Proceedings Elsevier
Petroleum Industry Wastewater: Advanced and Sustainable Treatment Methods discusses the status of different approaches and advanced processes involved in the treatment of petrochemical and petroleum industry wastewater. The book focuses on advanced, sustainable, and environmentally friendly technologies for removing toxic pollutants from contaminated waters. The book also explores the environmental aspects and impacts of the petroleum industry discharge wastewater, their effect on aquatic life, and possible ways to deal with these effects. Keeping the global water crisis and fast depletion of natural fresh water in mind, more immediate knowledge, information, implication, and effective utilization of available resources are required than we anticipated. The book brings a wide range of methodologies and perspectives under one roof in a comprehensive manner. Describes advanced strategies and methods involved in petroleum industry water treatment Deals with ways to treat discharged water through cutting-edge technologies Presents an overview of pollutant degradation in industrial wastewater Highlights advanced and technological know-how for a variety of applications
Natural Gas John Wiley & Sons
This is the sixth volume in a series of books on natural gas engineering, focusing carbon dioxide (CO2) capture and acid gas injection. This volume includes information for both upstream and downstream operations, including chapters on well modeling, carbon capture, chemical and thermodynamic models, and much more. Written by some of the most well-known and respected chemical and process engineers working with natural gas today, the chapters in this important volume represent the most cutting-edge and state-of-the-art processes and operations being used in the field. Not available anywhere else, this volume is a must-have for any chemical engineer, chemist, or process engineer working with natural gas. There are updates of new technologies in other related areas of natural gas, in addition to the CO2 capture and acid gas injection, including testing, reservoir simulations, and natural gas hydrate formations. Advances in Natural Gas Engineering is an ongoing series of books meant to form the basis for the working library of any engineer working in natural gas today. Every volume is a must-have for any engineer or library.

Natural Attenuation for Groundwater Remediation

Gulf Professional Publishing
Natural Gas: A Basic Handbook, Second Edition provides the reader with a quick and accessible introduction to a fuel source/industry that is transforming the energy sector. Written at an introductory level, but still appropriate for engineers and other technical readers, this book provides an overview of natural gas as a fuel source, including its origins, properties and composition. Discussions include the production of natural gas from traditional and unconventional sources, the downstream aspects of the natural gas industry. including processing, storage, and transportation, and environmental issues and emission controls strategies. This book presents an ideal resource on the topic for engineers new to natural gas, for advisors and consultants in the natural gas industry, and for technical readers interested in learning more about this clean burning fuel source and how it is shaping the energy industry. Updated to include newer sources like shale gas Includes new discussions on natural gas hydrates and flow assurance Covers environmental issues Contain expanded coverage of liquefied natural gas (LNG)
Handbook of Liquefied Natural Gas CRC Press
Sponsored by the Natural Attenuation Task Committee of the Environmental and Multi-Media Council of the Environmental and Water Resources Institute of ASCE. This report provides the regulatory framework, scientific and engineering principles, and applications of natural attenuation for the remediation of contaminated sites. Natural attenuation is a process that relies on the natural assimilative capacity of a site to reduce or stabilize contaminates to desirable levels. It is becoming an increasingly popular, cost-effective remedial alternative for many contaminated sites. The report describes in detail sites contaminated with petroleum hydrocarbons and MTBE, chlorinated solvents, polycyclic aromatic hydrocarbons, metals, and radioactive wastes. Topics include: Ømajor pollutants; Øextensive review of literature; Øexamples of applications of natural attenuation; Øsite characterization and monitoring requirements and procedures; and Øbasic scientific principles on physical, chemical, and biological processes. Environmental engineers and scientists will find this book full of information on basic principles to summaries of natural attenuation applications.

Petroleum Industry Wastewater

John Wiley & Sons
Fundamentals of Natural Gas Processing explores the natural gas industry from the wellhead to the marketplace. It compiles information from the open literature, meeting proceedings, and experts to accurately depict the state of gas processing technology today and highlight technologies that could become important in the future. This book cov
Sorbents Materials for Controlling Environmental Pollution CRC Press
Volume 2 covers the constituents of gas streams and their properties. The author presents the chemistry and engineering aspects of the methods and principles by which the gas streams might be cleaned from their noxious constituents. The concept of gas condensate is also discussed as well as the methods which can be applied to the analysis of streams and condensate. Vol. 1: Origin and Reservoir Engineering. Vol. 3: Uses of Gas and Effects.

Air, Gas, and Water Pollution Control Using Industrial and Agricultural Solid Wastes Adsorbents

Academic Press
Sorbents Materials for Controlling Environmental Pollution: Current State and Trends presents data on current use and future trends regarding sorbent materials employed against soil, water, and air

pollution. The book is organized first by use and research for a variety of geographic areas. It will then focus on different sorbent materials and their uses, followed by various pollutants and their management. Including updated and extensive data from an assortment of sources, the book is organized to be very accessible, including with an interactive table to help identify the results of appropriate sorbents for each environmental compartment. The growing concern regarding soil, water and air pollution all over the world has implications for climate change and sustainability, making Sorbents Materials for Controlling Environmental Pollution: Current State and Trends an important reference for environmental scientists to identify tools for moving forward in solving these problems. Includes data and examples from various geographic locations worldwide Synthesizes data for a variety of sorbent material from different sources Presents data for various kinds of pollutants across environmental spheres, including soil, water, and air Utilizes an interactive table for quicker access to data and results

Environanotechnology

ASCE Publications
Liquefied natural gas (LNG) is a commercially attractive phase of the commodity that facilitates the efficient handling and transportation of natural gas around the world. The LNG industry, using technologies proven over decades of development, continues to expand its markets, diversify its supply chains and increase its share of the global natural gas trade. The Handbook of Liquefied Natural Gas is a timely book as the industry is currently developing new large sources of supply and the technologies have evolved in recent years to enable offshore infrastructure to develop and handle resources in more remote and harsher environments. It is the only book of its kind, covering the many aspects of the LNG supply chain from liquefaction to regasification by addressing the LNG industries' fundamentals and markets, as well as detailed engineering and design principles. A unique, well-documented, and forward-thinking work, this reference book provides an ideal platform for scientists, engineers, and other professionals involved in the LNG industry to gain a better understanding of the key basic and advanced topics relevant to LNG projects in operation and/or in planning and development. Highlights the developments in the natural gas liquefaction industries and the challenges in meeting environmental regulations Provides guidelines in utilizing the full potential of LNG assets Offers advices on LNG plant design and operation based on proven practices and design experience Emphasizes technology selection and innovation with focus on a "fit-for-purpose design Updates code and regulation, safety, and security requirements for LNG applications
Gulf Professional Publishing
In the past decade, officials responsible for clean-up of contaminated groundwater have increasingly turned to natural attenuation-essentially allowing naturally occurring processes to reduce the toxic potential of contaminants-versus engineered solutions. This saves both money and headaches. To the people in surrounding communities, though, it can appear that clean-up officials are simply walking away from contaminated sites. When is natural attenuation the appropriate approach to a clean-up? This book presents the consensus of a diverse committee, informed by the views of researchers, regulators, and community activists. The committee reviews the likely effectiveness of natural attenuation with different classes of contaminants-and describes how to evaluate the "footprints" of natural attenuation at a site to determine whether natural processes will provide adequate clean-up. Included are recommendations for regulatory change. The committee emphasizes the importance of the public's belief and attitudes toward remediation and provides guidance on involving community stakeholders throughout the clean-up process. The book explores how contamination occurs, explaining concepts and terms, and includes case studies from the Hanford nuclear site, military bases, as well as other sites. It provides historical background and important data on clean-up processes and goes on to offer critical reviews of 14 published protocols for evaluating natural attenuation.
Encyclopedia of Microbiology BoD – Books on Demand
Since the early 1970s, experts have recognized that petroleum pollutants were being discharged in marine waters worldwide, from oil spills, vessel operations, and land-based sources. Public attention to oil spills has forced improvements. Still, a considerable amount of oil is discharged yearly into sensitive coastal environments. Oil in the Sea provides the best available estimate of oil pollutant discharge into marine waters, including an evaluation of the methods for assessing petroleum load and a discussion about the concerns these loads represent. Featuring close-up looks at the Exxon Valdez spill and other notable events, the book identifies important research questions and makes recommendations for better analysis ofâ€"and more effective measures againstâ€"pollutant discharge. The book discusses: Inputâ€"where the discharges come from, including the role of two-stroke engines used on recreational craft. Behavior or fateâ€"how oil is affected by processes such as evaporation as it moves through the marine environment. Effectsâ€"what we know about the effects of petroleum hydrocarbons on marine organisms and ecosystems. Providing a needed update on a problem of international importance, this book will be of interest to energy policy makers, industry officials and managers, engineers and researchers, and advocates for the marine environment.
Fundamentals of Natural Gas Processing CRC Press
Solubility is fundamental to most areas of chemistry and is one of the most basic of thermodynamic properties. It underlies most industrial processes. Bringing together the latest developments and ideas, Developments and Applications in Solubility covers many varied and disparate topics. The book is a collection of work from leading experts in their fields and covers the theory of solubility, modelling and simulation, industrial applications and new data and recent developments relating to solubility. Of particular interest are sections on: experimental, calculated and predicted solubilities; solubility phenomena in 'green' quaternary mixtures involving ionic liquids; molecular simulation approaches to solubility; solubility impurities in cryogenic liquids and carbon dioxide in chemical processes. The book is a definitive and comprehensive reference to what is new in solubility and is ideal for researcher scientists, industrialists and academics
Natural Attenuation of Hazardous Wastes CRC Press
Fundamentals of Natural Gas Processing, Third EditionCRC Press

Proceedings

Elsevier
Air and water pollution occurs when toxic pollutants of varying kinds (organic, inorganic, radioactive and so on) are directly or indirectly discharged into the environment without adequate treatment to remove these potential pollutants. There are a total of 13 book chapters in three sections contributed by significant number of expert authors around the world, aiming to provide scientific knowledge and up-to-date development of various solid wastes based cost-effective adsorbent materials and its sustainable application in the removal of contaminates/pollutants from air, gas and water. This book is useful for the professions, practicing engineers, scientists, researchers, academics and undergraduate and post-graduate students' interest on this specific area. Key Features: • Exclusive compilation of information on use of industrial and agricultural waste based adsorbents for air and water pollution abatement. • Explores utilization of industrial solid wastes in adsorptive purification and agricultural and agricultural by-products in separation and purification. • Discusses cost-effective solid wastes based emerging adsorbents. • Alternative adsorbents in the removal of a wide range of contaminants and pollutants from water is proposed. • Includes performance of unit operations in waste effluents treatment.
Oil & Gas Produced Water Management Gulf Professional Publishing
Understanding and utilizing the interactions between environment and nanoscale materials is a new way to resolve the increasingly challenging environmental issues we are facing and will continue to face. Environanotechnology is the nanoscale technology developed for monitoring the quality of the environment, treating water and wastewater, as well as controlling air pollutants. Therefore, the applications of nanotechnology in environmental engineering have been of great interest to many fields and consequently a fair amount of research on the use of nanoscale materials for dealing with environmental issues has been conducted. The aim of this book is to report on the results recently achieved in different countries. It provides useful technological information for environmental scientists and will assist them in creating cost-effective nanotechnologies to solve critical environmental problems, including those associated with energy production. Presents research results from a number of countries with various nanotechnologies in multidisciplinary environmental engineering fields Gives a solid introduction to the basic theories needed for understanding how environanotechnologies can be developed cost-effectively, and when they should be applied in a responsible manner Includes worked examples that put environmental problems in context to show the actual connections between nanotechnology and environmental engineering
Developments and Applications in Solubility WIT Press
This book explains various kinds of non-ionizing and high-energy radiations, their interaction with materials and chemical reactions, and conditions of various kinds of materials development technologies including applications. It covers a processing-structure-property relationship and radiations used in developing many advanced materials used in various fields. It highlights application-oriented materials synthesis and modification covering a wide variety of materials such as plastics, rubber, thermo-set, ceramics, and so forth by various radiations. Features: Explains ionizing and non-ionizing radiation-assisted materials development technologies, for polymers, ceramics, metals, and carbons. Covers radiation-assisted synthesis, processing, and modification of all kinds of materials. Provides comparative studies, merits, demerits, and applications very systematically. Criss-crosses polymers science and technology, radiation technology, advanced materials technology, biomaterials technology, and so forth. Includes a section on 3D printing by LASER melting of CoCr alloys. This book is aimed at researchers and graduate students in materials science, radiation chemistry and physics, and polymer and other materials processing.
Air Pollution XXVI Springer Science & Business Media
The number-one environmental threat to public health, air pollution remains a pressing problem-made even more complicated by the massive quantity and diversity of air pollution sources. Biofiltration technology (using micro-organisms growing on porous media) is being recognized as one of the most advantageous means to convert pollutants to harmless products. Done properly, biofiltration works at a reasonable cost-utilizing inexpensive components, without requiring fuel or generating hazardous by-products. Firmly established in Europe, biofiltration techniques are being increasingly applied in North America: Biofiltration for Air Pollution Control offers the necessary knowledge to "do it right."

Energy Innovations Small Grant Program

Royal Society of Chemistry
Natural gas is considered the dominant worldwide bridge between fossil fuels of today and future resources of tomorrow. Thanks to the recent shale boom in North America, natural gas is in a surplus and quickly becoming a major international commodity. Stay current with conventional and now unconventional gas standards and procedures with Natural Gas Processing: Technology and Engineering Design. Covering the entire natural gas process, Bahadori's must-have handbook provides everything you need to know about natural gas, including: Fundamental background on natural gas properties and single/multiphase flow factors How to pinpoint equipment selection criteria, such as US and international standards, codes, and critical design considerations A step-by-step simplification of the major gas processing procedures, like sweetening, dehydration, and sulfur recovery Detailed explanation on plant engineering and design steps for natural gas projects, helping managers and contractors understand how to schedule, plan, and manage a safe and efficient processing plant Covers both conventional and unconventional gas resources such as coal bed methane and shale gas Bridges natural gas processing with basic and advanced engineering design of natural gas projects including real world case studies Digs deeper with practical equipment sizing calculations for flare systems, safety relief valves, and control valves
Modeling, Control, and Optimization of Natural Gas Processing Plants National Academies Press
ENCYCLOPEDIA OF RENEWABLE ENERGY Written by a highly respected engineer and prolific author in the energy sector, this is the single most comprehensive, thorough, and up-to-date reference work on renewable energy. The world's energy industry is and has always been volatile, sometimes controversial, with wild swings upward and downward. This has, historically, been mostly because most of our energy has come from fossil fuels, which is a finite source of energy. Every so often, a technology comes along, like hydrofracturing, that is a game-changer. But is it, really? Aren't we just delaying the inevitable with these temporary price fixes The only REAL game-changer is renewable energy. For decades, renewable energy sources have been sought, developed, and studied. Sometimes wind is at the forefront, sometimes solar, and, for the last decade or so, there has been a surge in interest for biofeedstocks and biofuels. There are also the "old standbys" of nuclear and geothermal energy, which have both been around for a very long time. This groundbreaking new volume presents these topics and trends in an encyclopedic format, as a go-to reference for the engineer, scientist, student, or even layperson who works in the industry or is simply interested in the topic. Compiled by one of the world's best-known and respected energy engineers, this is the most comprehensive and up-to-date encyclopedia of renewable energy ever written, a must-have for any library. Encyclopedia of Renewable Energy: Is written in an encyclopedic style, covering every aspect of renewable energy, including wind, solar, and many other topics Offers a comprehensive coverage of the industry, from the chemical processes of biofeedstocks and biofuels to the machinery and equipment used in the production of

fuel and power generation Is filled with workable examples and designs that are helpful for practical applications Covers the state of the art, an invaluable resource for any engineer Audience Engineers across a variety of industries, including wind, solar, process engineering, waste utilization for fuels, and many others, such as process engineers, chemical engineers, electrical engineers, petroleum engineers, civil engineers, and the technicians and other scientists who work in this field