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HYDROGEOLOGY OF AN ARID REGION: THE ARABIAN GULF AND ADJOINING AREAS

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PREFACE

The Arabian Peninsula is an arid to semi-arid region, with a low rainfall and high temperatures most of the year, but with a high humidity in the coastal areas during the summer months. Water resources are limited, yet the availability of a sufficient supply of good quality water is the major requirement for the social, industrial, agricultural and economic development of the region. The increased demand for water arises from the improved standard of living, population growth and development arising from the oil revenues.

The countries of the Arabian Peninsula have made great efforts, to remedy the water shortage, by providing the financial and technical backing, for water desalination, treatment of wastewater and improved management and conservation techniques. The various water ministries, universities and research centres have supported scientific research, and applied the most recent technologies, in the search for new and alternative water supplies. Laws have been promulgated and economic and public relation campaigns have been developed, to promote and encourage the practice of efficient water use and the conservation of this scarce commodity.

In this book we have tried to provide the most important source of information for senior undergraduate and graduate students and researchers of the Gulf area, and more generally of arid regions, in order to comprehend the nature of the problems and how they interact with all aspects of life. In an area with a water deficiency, these interactions are more clearly defined than in water rich environments. For this reason sections on water laws and management, not usually found in regular hydrology was appropriately placed. The first part of the book is of a general character, it provides a geographic and geologic setting and emphasizing the climatic parameters, followed by a discussion on the aquifers and water chemistry. The second part of the book is devoted to the legal and management aspects of water resources, the more detailed studies of individual areas follows, and the book ends with the application of computer modeling of water flow and aquifers. Obviously the coverage cannot be complete, but a substantial bibliography provides a key to more detailed study.

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