Principles of Groundwater Engineering, by William C. Walton, Lewis Publishers, 121 South Main Street, Chelsea, MI, 48118, 1991, ISBN 0-87371-283-8, 546 pp., including indices, $69.

This book is written as a reference guide for groundwater engineering. It attempts to bring under one cover principles used by professionals to evaluate groundwater systems and design related facilities. The author is a seasoned hydrogeologist with many years of practical experience in various applications. The text and content are focussed in bridging the gap between groundwater theory and applied problem solving. The reader is provided copious references to texts which address the latter two subjects. Individual chapters provide equations for predicting such phenomena as nonleaky artesian radial flow, leaky artesian radial flow, water table radial flow, dealing with boundaries in developing flow nets, and conducting aquifer and tracer tests. Contaminant migration is discussed along with production and drainage facilities, and modeling. Specific attention is directed to a discussion of a finite difference flow model and a random walk mass transport model. Walton draws on his extensive experience with U.S.G.S. models to describe them and illustrate typical outputs. The book is complemented with extensive appendices providing tabular values for a number of groundwater parameters for different aquifer matrices.

In covering the subjects of hydrogeology, contaminant transport and engineering geology in one text-book, topics are sometimes treated with a brevity which lacks derivation and could easily confuse the novice. Equations are not derived and little explanation is provided. Indeed, some of the figures contain minimal explanation of what they are attempting to illustrate. Neither is this a comprehensive reference work. The organization does not lend itself to quick selection of useful values, e.g., an appendix on contaminant characteristic values provides data organized by relative value rather than alphabetically by contaminant and some of the tables have rather limited number of entries. Similarly, the modeling discussions focus on a select set of models and mention other approaches such as analytical and finite-element codes only in passing. I would recommend this book to the professional hydrogeologist who is looking for a desktop reference on predictive tools employed by the U.S.G.S. and methods for analyzing aquifer data that the reader has been trained within the past and now seeks a refresher when applying them.

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Cadmium Toxicity, Monograph for Agency for Toxic Substances and Disease Registry, Public Health Service, 1600 Clifton Rd., N.E. Atlanta, GA 30333, June 1990, 24 pp., paper, no charge.

This monograph is one of 28 publications detailing case studies in environmental medicine and toxicology. A 60-year-old lady with back pains is