

This is a comprehensive piece of work that can be of use to all levels of professionals involved in conducting site assessments. I recommend it enthusiastically for ready access on your desk top.

GAYNOR DAWSON

Geological Aspects of Hazardous Waste Managements, by S.M. Testa, Lewis Publishers, 1994, 537, pp., US\$ 59.95, ISBN 0-87371-630-2

As implied by the title, this book focuses on the problems of hazardous waste management and the role of the geologist in addressing those problems. It covers both historic problems as related to restoration of contaminated environmental media, and contemporary problems associated with siting new disposal facilities. The author notes that waste management is an interdisciplinary activity. As such, the book presents information beyond the geological aspects to introduce key interfaces with chemistry, engineering and regulatory concerns.

The text consists of 13 chapters and three appendices. The first chapter is introductory and defines the subject matter of subsequent chapters. The second chapter provides a synopsis of the regulatory programs with which the practitioner should be familiar. The next two chapters summarize the relevant principles of geology and hydrogeology, respectively. These chapters are quite technical in nature and sufficiently quantitative to serve as general text books for introductory geological courses on environmental applications. Chapter 5 addresses techniques for subsurface characterization. Descriptions are provided for drilling techniques, penetrometer surveys, and soil vapor monitoring. Soil classification methods are described and guidelines for production of boring/well construction logs provided.

Chapter 6 summarizes both surface and downhole geophysical exploration methods. Chapter 7 provides a summary of waste characterization regulations and related considerations. This is followed by a chapter on the fate and transport process that occur in the subsurface. A separate discussion of dense nonaqueous phase liquids (DNAPLs) is provided in Chapter 9.

The remaining chapters discuss the four basic waste disposal technologies: landfilling, underground injection, placement in underground repositories, and ocean discharging. The chapter on landfills includes design considerations, siting criteria and case studies. The discussion of underground injection is focused on design considerations and the fate of injected contaminants. Chapter 12 on geologic repositories describes host rock types and summarizes design considerations. The ocean disposal chapter is directed to a description of waste types and the relevant oceanic processes that must be considered. Appended materials include conversion tables, a glossary and reference materials on preservation times/conditions for various analytical methods.

This book is written for geologists and those familiar with geological terms. The text includes a significant amount of technical jargon that may discourage the novice reader. Several of the nongeological topics are touched on only lightly and will require

supplementary texts if the reader is not familiar with the subject matter. I recommend the book to geologists who are moving into the environmental field or those who wish to update their knowledge on newer techniques.

GAYNOR DAWSON

Field Sampling Methods for Remedial Investigations, by M. Byrnes, Lewis Publishers, 1994, 254 pp., US \$69.95, ISBN 0-87371-698-1

This book was written with the express purpose of teaching environmental professionals how to write and execute plans for the characterization of sites that may contain hazardous contaminants. The text is organized in a manner to facilitate direct application to the field sampling program development process. After an introduction to general considerations, the author provides a brief synopsis of the relevant environmental laws with which activities must comply. The second chapter provides a description of the staged data quality objectives (DQO) process which defines the sequence of events for development of a field sampling program.

The bulk of the text is dedicated to the presentation of standard operating procedures in Chapter 3. Methods addressed include those for collecting samples from shallow and deep soils, sediments, surface waters, ground waters, and drums. Specific approaches for both historic and newer methodologies are provided.

The final four chapters discuss equipment decontamination; sample preparation, preservation, documentation and shipment; health and safety; and management of investigation derived wastes. Appended reference materials include conversion tables, soil classification descriptions, and diagrams of radiological decay chains.

This is a good book for novices and staff newly assigned to field operations. It may also be helpful to more experienced personnel looking for a quick reference to SOPs. The text is accompanied by extensive photographs and diagrams that facilitate understanding.

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