

Not only should the book be useful to operators, but it could also be used as a text in two-year chemical technology programs of which there are several in the United States.

GARY F. BENNETT

Hazardous Waste Leachate Management Manual, by A.J. Shuckrow, A.P. Pajak and C.J. Touhill, Noyes Data Corporation, Park Ridge, NJ, 1982, 379 pages, \$36.00.

This manual was written by Shuckrow et al. under a contract with the U.S. Environmental Protection Agency which wished to provide a guidance document for their personnel involved with hazardous waste sites and especially for those at the front end, i.e. writing permits for sites.

It was my good fortune to be involved with the authors during the execution of this contract as a critical reviewer of the draft report to the USEPA — hence I shall restrict my review to a factual rather than a judgmental evaluation.

The book begins with a short section on leachate generation and the physical, chemical and biological influences on that process. The second, slightly longer section, examines hazardous waste leachate characterization; included is an 11-page table summarizing the contaminants and the concentrations reported in leachate.

The next three Sections (4, 5 and 6) deal with the leachate treatment technology that must be utilized to render it suitable for discharge. The final two sections of the main part of the book deal with monitoring and other important considerations (including safety, contingency plans, equipment backup, permits and surface runoff).

The last two-thirds of the book are appendices, which include:

- (a) Summary of reported water contamination problems at hazardous waste disposal sites.
- (b) Listing of RCRA pollutants, unit process summaries — sanitary landfill leachate treatment.
- (c) Unit process summaries — industrial wastewater treatment.
- (d) Treatability of leachate.

The last of these appendices (treatability) actually takes up about half of the book. The authors report on the treatability of a wide range of chemicals by biological processes, chemical precipitation, reverse osmosis, ultrafiltration, stripping, solvent extraction, activated carbon and resin adsorption.

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