

2. **Evaluating and Selection of Models for Estimating Air Emissions from Hazardous Waste Treatment and Disposal Facilities (1984)**
3. **Physical-Chemical Properties and Categorization of RCRA Waste According to Volatility (1985)**

As the U.S. EPA continues with its development of rules and regulations designed to protect environmental quality around hazardous waste landfills, I feel that air quality concerns, which have lagged behind concerns for groundwater contamination will catch up. I think the number of U.S. EPA reports I have seen regarding emissions of volatile compounds from landfills, modelling of those emissions and proposed controls is an indication they are catching up quickly.

In the first part of the book, the authors evaluate control of volatile organics after first catching your attention with data that volatile emission from TSDFs (treatment storage and disposal facilities) range from 1.6 to 5 million metric tons a year in the United States. For each principal type of hazardous waste management facility, sources of atmospheric emissions are described and controls representing different approaches are examined and compared.

The difficult area (problem) of modelling emission of volatile materials from TSDFs was examined in the second report published. Mathematical modelling techniques were described, in order to allow one to predict emissions of volatile materials from landfills, land farms surface impoundments, storage tanks, wastewater treatment facilities, and drum handling and storage facilities. Of all these sources, I might note that landfills present the greatest challenge because of the variety of chemicals, difficulty in accurately analyzing the off-gases, lack of knowledge of what is in the landfill, variability of meteorology, difficulties in air dispersion modelling and the problem modelling vapor diffusion through the soil. The modelling task is not easy, but proof of success may be field validation of the models which the authors discuss to a limited degree.

The final section of the book is a compilation of data from wastes defined under the Resource Conservation and Recovery Act (RCRA). The following data are given for more than 300 different chemicals: (1) molecular weight, (2) boiling point, (3) vapor pressure, (4) solubility, (5) logarithm of the octanol/water partition coefficient, (6) Henry's Law constant and (7) relative soil volatility. Diffusion coefficients for air and water and water phase mass transfer coefficients were also given for RCRA wastes which were identified as being highly volatile.

GARY F. BENNETT

*Hazardous Chemicals Data Book*, by G. Weiss, Noyes Publications, Park Ridge, NJ, U.S.A., 2nd edn., 1986, ISBN 0-8155-1072-1, 1069 pages, \$98.00.

The second edition of this book, based on the U.S. Coast Guard's data sys-

tem, "Chemical Response Information System (CHRIS)" contains rapidly available information on over 1000 chemicals (arranged alphabetically).

Data given for each chemical includes:

- Synonyms
- Chemical Reactivity
- Physical and Chemical Properties
- Labeling
- Shipping Information
- First Aid for Human Exposure; Water Pollution Effects; Methods of Handling
- Health Hazards and Toxicity
- Protective Equipment to be Used
- Response Action to be Taken

Compared to the first edition, the second appears to have 100 more chemicals listed. Dropped to make space were 400 (plus) material safety data sheets for a wide variety of other chemicals lesser used in Commerce.

GARY F. BENNETT

*Sludge Management and Disposal for the Practicing Engineer*, by P.A. Vesilind, G.C. Hartmen and E.T. Skene, Lewis Publishers, Inc., Chelsea, MI, U.S.A., 1986, ISBN 0-87371-060-6, 341 pages, \$49.50.

This book has two distinct parts: (1) a short 87 pp. introductory survey of the field of sludge management and (2) a much longer section (approximately 250 pp.) which is a consultant's study. The second section, which was a report by a consulting firm on its study of sludge disposal options for the City of St. Petersburg, Florida, is the main part of the book; the first part (the overview of sludge management) appears to have been appended to the consultant's report to make a publishable book.

Although both sections of the book are well written, contain useful data and present an interesting perspective on the problem of sludge management, such combinations really contribute to make an outstanding text.

I spent most of my time reading the initial part of the report and concluded that it would form a good basis for a college course lecture series on sludge management. It is an excellent survey (very well written) of the field, but I must emphasize the word survey — and in that lies its major fault; it is just too compact and too concise. Clearly, Vesilind, author of several other texts on sludge management, could have written much more and provided much more data on topics such as metal content of various sewage sludge and limits on land application generally in the United States — as an aside, I might note the consulting report did treat the subject well however for the State of Florida only.