

*Landfill Disposal of Hazardous Wastes and Sludges*, by Marshall Sittig, Noyes Data Corp., Park Ridge, New Jersey, 1979, \$48, 365 pp.

The Resource Conservation and Recovery Act (RCRA) passed by the U.S. Congress in 1976, was designed to "close the loop" in the control of environmental pollutants (in the United States), as it will bring under regulation the final step in pollution abatement — that of the disposal of contaminants collected in all phases of environmental cleanup. The Act has been termed as the most significant environmental action the U.S. has taken so far, with ramifications yet not comprehended, as it mandates control over generators, transporters and disposers of solid and hazardous wastes.

The law has a triple-threat impact on the hazardous waste field. First, it classifies as hazardous, many wastes that were not so considered before; second, the Act should stop illegal dumping of waste material and both of these steps should drastically increase the amount of hazardous waste to be disposed of; third, the law places restrictions on disposal facilities (their design, operation, financing and ultimate closing), so that many fewer facilities will exist that will be able to handle hazardous waste.

The book addresses the latter of these problems — that of disposal of hazardous materials in landfills. In the book, the material presented on landfill technology and directions for the disposal of hazardous and toxic substances, are based on reports and guidelines mainly issued by the U.S. Environmental Protection Agency. Excerpts from pertinent U.S. patents are also included.

The following are the titles of the twelve chapters: 1. Waste Sources; 2. Waste Disposal Alternatives; 3. Regulatory Requirements; 4. Waste Preparation; 5. Public Relations and Public Participation; 6. Site Selection; 7. Design; 8. Construction and Operation; 9. Monitoring; 10. Landfill Application to Specific Industry Waste; 11. Economic Aspects; 12. Final Land Use.

The book is important and timely as RCRA comes close to implementation. (Final U.S. EPA rules are expected in mid-1980.) In spite of Congress' desire for resource recovery (as the Act's name implies) the author notes: "There are a great many materials that are too low in value to recycle, too difficult to degrade, too thick to inject into deep wells and too contaminated with heavy metals and other noninflammable materials to incinerate. The disposal operation of last resort is ground burial. It is not an ideal solution, not necessarily even a good solution, but the only solution we have."

Because of the publisher's use of advanced composition techniques, they are able to get books into print quickly; indeed one reference was Jan. 22, 1979, less than six months prior to this reviewer's receipt of the book. One of the concessions to speed, however, is the omission of the compilation of an index, the absence of which the author attempts to ameliorate with a well-developed table of contents.

The reference sources utilized by Sittig number 29 — about one-half are U.S. Environmental Protection Agency reports; other sources are Noyes' other

books (5), articles in *Chemical Engineering* (4) and other texts (3). One section of special interest to this reviewer deals with the landfill disposal of oil spill cleanup debris. The data presented by Sittig are based on an EPA state-of-the-art manual released in August 1976. Site selection and disposal method to be used are the two major topics discussed. In the latter category, Sittig discusses land cultivation, land filling with refuse, and burial; he shows diagrams of cross-sections of two different methods of burial (above and below ground).

G.F. BENNETT

*More Than a Paycheck: An Introduction to Occupational Cancer.* 16-mm, sound, color motion picture, 28 minutes; available on loan from Uniten Systems Inc., 246 W. 34th St., Indianapolis, Indiana 46208.

Prepared for OSHA by the George Washington University Medical School, and produced by Airlie Foundation, this film is intended to be an introduction to occupational carcinogenesis. If the viewer has been shielded from the media during the past twenty years, perhaps the material will be new; if not, it is a strange mixture of medical science and industrial montages. Narrated by John Wayne shortly before his death of cancer, the film features interviews with several persons as part of its presentation.

Dr. Irving Selikoff, Mt. Sinai Medical Center, discusses the general problem of occupational cancer, and stresses the long clinical latency or induction period. He mentions the trades at highest risk as roofers, asbestos workers, uranium miners, and painters. The co-carcinogenic action of cigarette smoke concurrent with inhalation of fumes and dusts is mentioned.

Dr. Paul Kotin, Johns Mansville, notes that safe work practices, and the strict adherence to good procedures, including respiratory protection and hygiene, are essential when working with potential carcinogens.

Dr. Robert Scala, EXXON, explains the role of animal testing in the understanding of toxicity and carcinogenic effects, and notes that society must eventually determine the socially acceptable risks of exposure to carcinogens.

Mr. Jack Sheehan, United Steelworkers, points out that both management and workers have lacked adequate information in the past, and stresses the importance of public disclosure of information.

The regular safety training course for supervisory staff at the Dow Chemical Texas plant is pictured, and the importance of supervisor/worker follow-up is mentioned.

New Jersey's high concentration of chemical industry is noted, and a well-instrumented plant is reviewed in which polymerization equipment is well ventilated, where sensors and alarms warn of leaks, and personnel have air-supplied respirators at the ready for immediate donning. Proper tank-entry