Fundamentals of Hazardous Waste Site Remediation, Kathleen Sellers, Lewis Publishing, Boca Raton, FL, 1999, $59.95, 326 pp., ISBN: 1-56670-281-X

This book is unique as a treatise on hazardous waste site remediation from a presentation (as contrasted to content) perspective. The author is a chemist/environmental engineer who works for an environmental service firm in the eastern USA (having worked previously for the US EPA).

This book is based on the syllabus and handouts that Ms. Sellers prepared for a course she taught at Tufts University—and based on my reading of the text, I conclude that it must have been a very good course. The author begins the book (uniquely, I believe), with a hypothetical contaminated site problem—the Ace Solvent Recovery Facility. Her discussion of former operations at the site, scope of site investigation, results of site investigation of soil and groundwater, and her final query, ''What do I do now?'' creates in the reader (especially a student) a need to know more about the topic.

Chapter 2, entitled 'Basic Principles,' also starts in an unusual way—with a discussion of the significance of numbers. Sellers is the first text author that I have discovered who has articulated a major pet peeve of mine—students and, yes, practicing engineers who report calculated results for more significant figures than the input to that calculated result justifies, i.e. an estimated cleanup cost of US$1 326 279.86 as though the 6 cents was meaningful.

After the discussion of significant figures, the author proceeds with a conventional discussion of basic physical/chemical principles governing hazardous waste site remedies, solubility, sorption, volatility, common contaminant chemistry, geologic formations, groundwater flow, and contaminant transport (including a discussion of non-aqueous phase liquids—LNAPLs and DNAPLs). Sellers ends the chapter with an excellent (that means understandable to me) discussion of Risk Assessment (which she titles 'How Clean is Clean').

One aspect of the book I liked very much (and find lacking in many other books I have reviewed) was the presence of numerous numerically worked examples. The calculations for risk and risk-based cleanup levels were excellent.

The rest of the book (two long chapters) is devoted to a discussion of remediation technologies:

Groundwater Remediation (Chapter 3)

Soil Remediation (Chapter 4)

Although not in great detail, the author's treatment and coverage of remediation technologies was comprehensive from a topic perspective. I noted that such new (and as yet seldom used) processes as phytoremediation and electrokinetic remediation were discussed (the latter referring at one point to Acar who was the editor of a special issue of the *Journal of Hazardous Materials* on that topic).

Two other points are worthy of note. The first is praise for the excellent series of student exercises—both questions to be answered by essay (or discussion) and those to be worked numerically. I was impressed by their scope. However, I would have preferred (as an instructor) the answers to these questions to be supplied in a separate instructor's manual and not published in the back of the book. The latter's great for the practicing engineer, but reduces very much an instructor's potential utilization of the

questions to stimulate the thinking of his/her students and, of course, to evaluate the student's understanding of the material.

The final point to be made is that the book is very well-referenced, although Sellers leans a little too heavily (in my opinion) on US Government (mainly ES EPA) reports.

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How to Find Chemical Information: A Guide for Practicing Chemists, Educators, and Students, Robert E. Maizell, John Wiley & Sons, New York, 3rd Ed., 1998, $64.95, 515 pp., ISBN: 0-471-12579-2

The universe of technical information available through print and electronic sources is almost overwhelming. One could spend one's complete career reading available materials—reading at least but not accomplishing one's research or engineering task, i.e. to learn what's new. The alternative, complete disregard of published material, is unacceptable. What then to do?

This book, *How to Find Chemical Information: A Guide for Practicing Chemists, Educators and Students*, offers a solution. My dilemma was how to review it? There is so much good information that Maizell furnishes, a review of moderate length hardly does his book justice.

In the preface, Maizell writes:

''Chemical information tools are more crucial than ever to help the chemist and chemical engineer save valuable time, control costs, and achieve the most effective work. For many activities in chemistry and chemical engineering, optimum use of chemical information sources is key to success or failure.

More chemical information tools are available today than ever before, and many are more powerful than ever imagined before.''

As the reader would expect, the new edition discusses online (computer) sources of information in much detail.

A measure of the growth of the printed literature is found in the number of abstract publication such as Chemical Abstracts. That publication has grown about 6%/year since it began in 1907. The first index, covering 10 years and published in 1916, contains 192 000 references; the 5-year index published in 1991, contains 3 052 700 references. The price of Chemical Abstracts was $6/year in 1934 and rose to $18 900 in 1997.

But why spend the time searching the literature? The author answers that question in the following way:

''Effective use of chemical information helps avoid duplicating previous work. This achieves savings in time and funds and avoids infringing on the proprietary rights of others. In addition, even if there is no directly related previous work, the chemist who makes effective use of information can plan and act on a solid foundation of background data. Further, as a source of ideas, or for idea development, chemical information sources are invaluable fountains of inspiration and serendipity.''