

The volume is a most interesting exploration to the "real world" of releases of gases, vapors, and solids.

H. FAWCETT

*Barrier Containment Technologies For Environmental Remediation Applications*, by R.R. Rumer and M.E. Ryan, (Eds.), Wiley, New York, NY, 1995, 170 pp., ISBN 0-471-13272-1

Although brief, this is perhaps the most comprehensive text available describing technologies that can be applied to construct containment barriers for environmental remediation. The book begins with a brief introduction identifying the potential niche for containment technologies as aids to pump and treat remedies, as well as temporary solutions for those sites where no satisfactory alternatives exist or where time is needed to complete development of an in situ destruction method. The niche is described without being defensive and no attempt is made to persuade the reader. Rather, the statement is made and it is left to the reader to determine if containment makes sense for any given application.

The second chapter describes contaminant transport mechanisms and how they can be addressed to successfully contain plumes. Both convective and diffusive transport are considered. The text then turns to a discussion of site geologic and hydrogeologic features that may facilitate or hinder application. Specific focus is directed to stratigraphy, seismic activity and areas of recharge/discharge.

The third chapter is focused on the variety of barriers that are available to construct vertical walls. Different approaches for slurry walls, grouts and cutoff walls are described along with the relevant parameters that determine effectiveness, test methods to determine if objectives are likely to be met, compatibility considerations, backfill design for slurry walls, documentation of performance, and quality control. The information provided is quite detailed and uses numerous recent references that capture the results of the latest research.

The fourth chapter describes the installation of floors. The authors note from the outset that this is a fledgling technology with the best results obtained at sites that have a natural floor already in place. However, grouted bottoms and several very new experimental methods are described. An analysis is conducted to show the economic trade off between going deeper to find a natural floor and putting in a floor. Guidelines are provided to find the depth and radius of the containment where the decision changes.

The fifth chapter describes the design of caps for sites and presents a thorough discussion of the advantages and disadvantages of alternate materials for each of the five layers in a standard design. Conclusions are made in the final chapter. A glossary and index are included.

This is an excellent reference for practitioners who may need to design containment barriers. It does not include case studies which would be helpful, but the treatment is relatively even-handed and the information very up-to-date. I recommend this book for anyone responsible for evaluating remedies where conditions suggest that containment may be advisable.

JAYNOR DAWSON