

Each of the foregoing sections is resplendent with appropriate tables and process diagrams. Each chapter, too, is well, but not exhaustively referenced.

Mulligan discusses the theory behind each process and presents design equations with appropriate design variations given. However, she does not provide worked examples for practice. She does, however, do an excellent job reporting cost data (although, I am not qualified to evaluate their accuracy).

The book ends with two appendices: (1) a glossary of terms and abbreviations and (2) a list of vendors. The 30 pages devoted to the latter area, in my opinion, are a waste of space. Commercial firms too often move or disappear. Better to rely for this information, I believe, on the yearly lists provided by environmental magazines.

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Environmental Law for Engineers and Geoscientists

Robert Lee Aston (Ed.), Lewis Publishers, Boca Raton, FL, 2002, 280 pp., US\$ 99.95, ISBN 1-56670-575-4

“Today’s engineer needs to know more than how to design a new or remedial project or facility.” The foregoing is the phrase on the flyer advertising this book. The book itself begins with the statement: “This work is intended as a textbook of instruction in environmental law for engineers and geoscientists, to be used primarily in the geological, mining, petroleum, civil, and environmental engineering departments, and in the earth sciences curricula of universities.” Indeed it will be, but the course using this book will be a different/difficult one for scientists and engineers, given that the foundation of the book is standard fare of lawyers: cases. In my opinion, such a course would be taught best (and probably only) by an attorney.

In reviewing books, I often go to the final chapter to see “how the story ends.” My technique in reviewing this book was no exception as I am very interested in the topic of expert witnessing and admissible scientific evidence. My interest is based on my personal experience as an expert witness. What is intriguing, as described in the book, is the dramatically altered rules of the American Federal Court System regarding whether experts are admissible. To this end, Aston states “the expert’s testimony/evidence must now meet greater and more intense inspection by the judge as to the scientist’s procedure of investigative methods, relevancy, reliability of results, specific knowledge and experience of the question before the bar (the case), and professional peer acceptability of the investigatory methods.” The chapter ends with a short section containing advice on how to be a successful expert witness in courts.

Perhaps, I should back up and introduce the author whose background is very impressive, especially his academic accomplishments. Beginning his career with a mining engineering degree in 1950, he subsequently received law degrees (JD, LLM, and is an LLD candidate) and doctoral degrees (Ph.D. and D.E.). His last degree was in 2000. Dr. Aston is active as an attorney, as well as having been a faculty member in mining geology, petroleum geology, and mining engineering.

By way of introduction to the law, Chapters 1 and 2 are, respectively, titled: (1) Introduction to environmental law and (2) Basic law for engineers and geoscientists. The author

notes: “To study various laws and regulations affecting the practice of engineering and engineering projects, the case study method as normally employed in American law schools is used in this text. The case study method examines how the law in a litigated action with a particular issue, or issues, is argued, interpreted and applied by the hearing court or hearing board in the case of a regulatory agency review. Environmental case studies generally review the environmental issue being litigated from its inception at the agency level, to hearing board appeals, and through the appeal to the trial court. From the case study, the purpose and parameters of a regulation at issue are examined, defined, and construed by the court for implementation as intended by the enacting legislative body. Case studies offer the opportunity to learn from misinterpretations, mistakes and challenges of others, and to know what is expected in performance to comply with environmental regulations and laws.”

The case studies noted above are listed in the ‘Table of Contents’ which I estimate spans 240 cases (Aston actually discusses about 100 of those court cases), one of which I testified in. The case list is certainly up to date as one case litigated in 2001 is cited.

Major sections in the second chapter on basic law are: (1) Divisions of law which includes an overview of the American legal system, a description of the Federal court system and state courts, a discourse on statutory law/administrative law, and agency rule making; (2) General requirements for filing a civil court action; and (3) Briefs (case reports, finding the case style and citation of cases, and explanation of citations).

Next, Aston discusses the basics of three major US environmental laws: National Environmental Policy Act (NEPA), Clean Air Act (CAA), and Clean Water Act (CWA). Chapters 3–5 are devoted to the foregoing. Other important laws are discussed in Chapter 6: Toxic Substances Control Act (TOSCA), Resource Conservation Recovery Act (RCRA), and Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

Chapter 7, “Water pollution by abandoned mine sites; acid mine drainage; mined land restoration,” reflects the author’s roots in mining engineering. The relation (and use) of CERCLA, Superfund Act Reauthorization Amendments (SARA) and CWA to address the above noted problem is discussed. The task is not inconsequential as there are 550,000 abandoned sites of which 50 are on the Superfund hazardous site list.

Being an engineer whose major contact with the law has been as an expert witness, I cannot comment on the quality of the legal material presented. But I very much would have liked to have had the opportunity of taking a course of this title, especially if taught by the author.

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Combustion and Incineration Processes

Walter R. Niessen (Ed.), Marcel Decker, New York, 3rd Edition, 2002, 696 pp., US\$ 195.00, ISBN: 0-8247-0629-3

In the preface to his first edition of this book, which focused on incineration of municipal solid waste, Niessen wrote: “Purification by fire is an ancient concept, its applications noted in the earliest chapters of recorded history. The art and technology of combustion