



ENVIRONMENTAL CONTROL IN PETROLEUM ENGINEERING

JOHN C. REIS

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Preface

With the rise of the environmental protection movement, the petroleum industry has placed greater emphasis on minimizing the environmental impact of its operations. Improved environmental protection requires better education and training of industry personnel. There is a tremendous amount of valuable information available on the environmental impact of petroleum operations and on ways to minimize that impact; however, this information is scattered among thousands of books, reports, and papers, making it difficult for industry personnel to obtain specific information on controlling the environmental effects of particular operations. This book assembles a substantial portion of this information into a single reference.

The book has been organized and written for a target audience having little or no training in the environmental issues facing the petroleum industry. The first chapter provides a brief overview of these issues. The second chapter focuses on the various aspects of drilling and production operations, while the third chapter discusses the specific impacts associated with them. Chapter 4 discusses ways in which toxic materials can be transported away from their release sites. (Actual waste transport modeling is a very complex topic and is beyond the scope of this book.) The fifth chapter presents ways to plan and manage activities that minimize or eliminate potential environmental impacts without severely disrupting operations. The sixth chapter discusses the treatment of drilling and production wastes to reduce their toxicity and/or volume before ultimate disposal. Chapter 7 presents disposal methods for various petroleum industry wastes. The final chapter reviews available technologies for remediating sites contaminated with petroleum wastes. A summary of major United States federal regulations, a list of major U.S. chemical waste exchanges, and discussions of sensitive habitats and offshore releases of oil are provided in the appendixes.

This book has evolved from course notes developed by the author for use in undergraduate and graduate classes. In preparing the book, the author has read thousands of pages of papers, reports, manuals,

