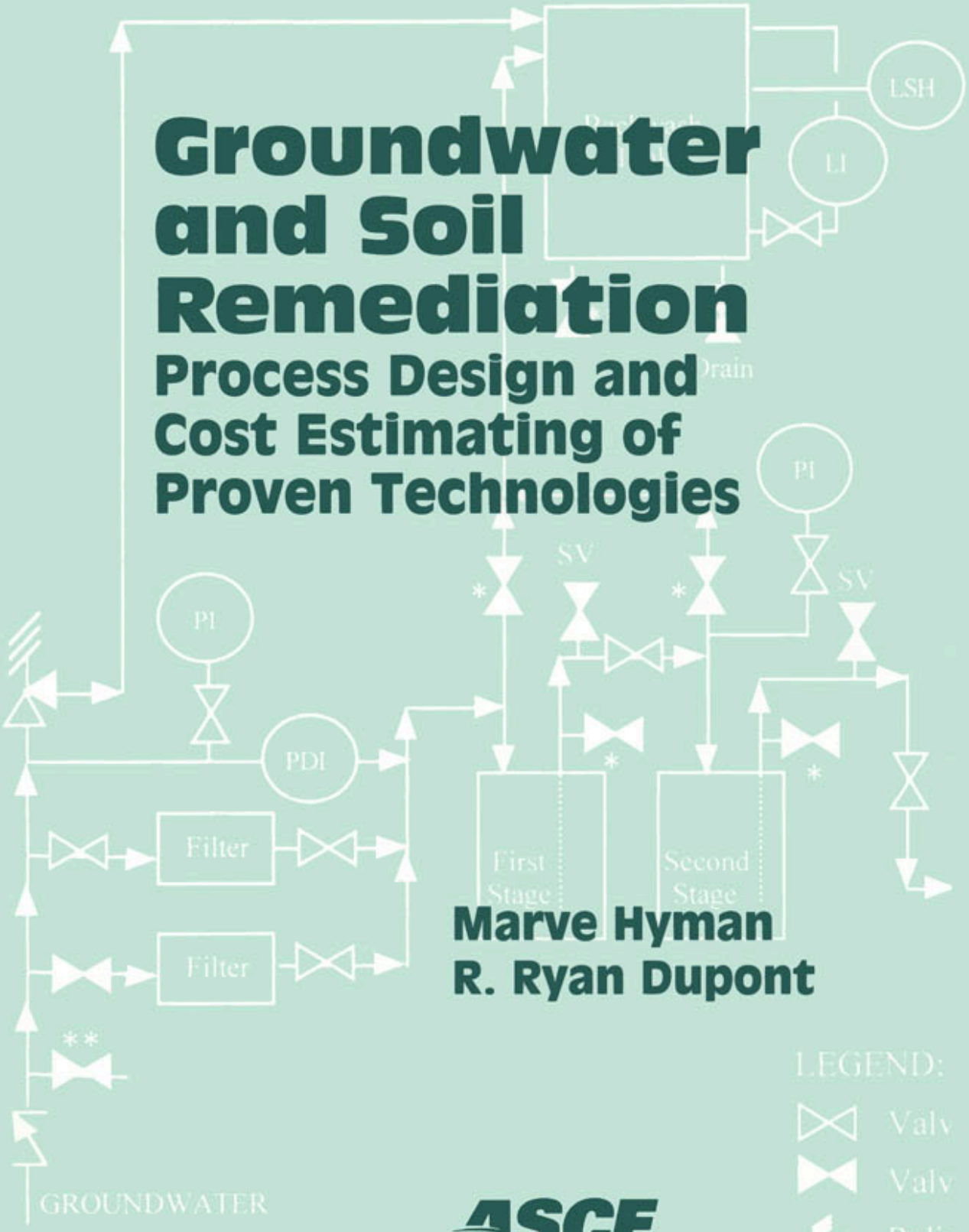
Groundwater and Soil Remediation

Process Design and Cost Estimating of Proven Technologies



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ASCE PRESS

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Abstract: This book provides the theory and application of proven soil and groundwater remediation techniques with an emphasis on the integration of remediation technologies into a process design scheme. Chemical engineering techniques are applied to civil/environmental engineering and hydrogeologic surface and subsurface contamination problems so that feasible remediation solutions can be identified from competing alternatives. The steps in systematic process design and process control are described in detail for a variety of soil and groundwater remediation techniques. Applications of traditional cost estimating methods as well as those developed especially for remediation systems, based on what is often limited subsurface information, are also presented.

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Preface

Since the Love Canal incident, Americans have become increasingly concerned with the importance of cleaning up contaminated groundwater and soils. *Groundwater and Soil Remediation: Process Design and Cost Estimating of Proven Technologies* discussed technologies available for cleanup, provides a systematic approach to integrating process technologies into a design scheme, and describes cost estimating methods for remediation. This book fills a pressing need for technical descriptions of existing cleanup methods and how to apply them.

Unique features of this text include

- Application of chemical engineering techniques to civil engineering and hydrogeological subsurface cleanup problems
- Development of process design
- Use of available software for design and cost estimating
- Application of cost estimating methods for both treatment and associated work such as remedial excavation.

The approach use here is to identify and quantify process parameters with an eye toward making the most accurate cost estimates possible with limited subsurface information.

Engineers and scientists responsible for environmental restoration will profit from using this material. Emphasis is on proven techniques and how to select feasible remediation solutions. The steps for system design, control and process monitoring are described in detail, along with techniques for estimating costs for both capital investments and annual expenses.

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Dedication

To the many students and colleagues that we have taught and learned so much from over the years.

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LIST OF FIGURES