Current Practices in Ground Water and Vadose Zone Investigations

David M. Nielsen and Martin N. Sara, editors

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Foreword

This publication, *Current Practices in Ground Water and Vadose Zone Investigations*, contains papers presented at the symposium of the same name, held in San Diego, CA on 30 Jan. to 1 Feb., 1991. The symposium was sponsored by ASTM Committee D-18 on Soil and Rock, its Subcommittee D18.21 on Ground Water and Vadose Zone Investigations, the U.S. Environmental Protection Agency, and the U.S. Geological Survey. David M. Nielsen of Nielsen Ground Water Sciences, Inc. (NGWS) in Galena, OH and Martin N. Sara of Waste Management, Inc. in Oak Brook, IL presided as symposium chairmen and are the editors of the resulting publication.
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Overview

The three-day symposium on Ground Water and Vadose Zone Monitoring was held to evaluate the experiences gained in the 1980s in ground-water and vadose zone monitoring technology and to examine the expectations for the 1990s. The symposium was broken down into nine sessions, which were as follows:

- **Session I**—Improving the Quality of Ground-Water Investigations
- **Session II**—Surface and Borehole Geophysics in Ground-Water Investigations
- **Session III**—Vadose Zone Investigation Methods
- **Session IV**—Soil Vapor Migration, Monitoring & Remediation
- **Session V**—Statistical Evaluations of Ground-Water Data
- **Session VI**—Direct Push Technology in Ground-Water Investigations
- **Session VII**—Ground-Water Monitoring Well Design and Installations
- **Session VIII**—Ground-Water Sampling & Sample Analysis
- **Session IX**—Miscellaneous Field Methods Used in Ground-Water Investigations

The papers contained in this Special Technical Publication (STP) represent a collection of some of the information being used to develop standards for the rapidly growing and evolving field of ground-water and vadose-zone monitoring. The intent of the symposium was to foster interdisciplinary communication and to make available state-of-the-art technology to those scientists and engineers engaged in ground-water and vadose-zone monitoring. A side benefit, but an important one, is that some of the papers may be useful in developing acceptable standards.

The papers published herein received at least three peer reviews and were reviewed by the editors following revisions of papers by the authors. The editors express appreciation to the reviewers who assisted so much in assuring the quality of papers in this STP. Appreciation also is expressed to the speakers at the symposium, the authors who prepared, revised, and provided final papers for publication, and the ASTM staff and officers of Committee D-18.