

## TESTING FORUM

### D-18 Addresses Standards for Frozen Soils and Rock

The newest of D-18 subcommittees is D18.19 on Frozen Soils and Rock, which is working to provide standards for the special load deformation characteristics of frozen soils. Currently, the group is developing a Standard Method of Testing Individual Piles in Permafrost Under Static Axial Compressive Load. The draft document, notes D18.19 chairman C. W. Lovell of Purdue University, is needed to help predict pile behavior in permafrost. The oil industry and construction in general should benefit from such a standard.

The draft test method covers procedures for testing individual vertical piles to determine response of the pile to a static compressive load applied axially to the pile. The method is applicable to all deep foundation units in permafrost that function in a manner similar to piles regardless of their method of installation. Test piles and reaction piles are installed as actual production piles would be, and temperature measuring devices are placed adjacent to the test pile to determine ground temperatures. Following the draft standard's instructions on installation, the details of the test apparatus and the procedure are given.

D18.19 is also working on a draft standard for frost susceptibility testing. The procedure involves two freeze-thaw cycles over a period of one week, while the magnitude of frost heave is measured, followed by a California Bearing Ratio (CBR) test. A table of heave rates and CBR values was given as frost susceptibility criteria.

The work on the frost susceptibility standard and the pile test standard will continue during the 24-28 Jan. 1988, meetings of Committee D-18 on Soil and Rock in Albuquerque, NM. For more information, contact C. W. Lovell, Purdue Univ., School of Civil Engineering, West Lafayette, IN 47907 (317/494-5034); or Robert Morgan, ASTM (215/299-5505).

### D-18 Seeks Environmental Contamination Information

A task group in Subcommittee D18.14 on Geotechnics of Waste Management is working to develop a list or matrix of existing and potential standards that are applicable to environmental contamination problems in soil, rock, and ground water. Over 60 existing and draft ASTM standards from committees with environmental activities are included so far, with such topics covered as site characterization, construction evaluation, and geosynthetics.

The information gathered by the task group is intended for use as a reference document and planning tool for the entire environmental community. To assist the task group, other ASTM subcommittees and committees, professional organizations, and societies are requested to cooperate. This work will continue during the 24-28 Jan. 1988, meetings of Committee D-18 on Soil and Rock in Albuquerque, NM.

Those with guidelines, protocols, and the like that are applicable to waste management and contamination issues are encouraged to

contact task group chairman William McKinnell, c/o West Corp. Environmental Contractors, 3676 South Natches Ct., Englewood, CO 80110 (303/789-1332).

### D18.14 Characterizes Soils for Disposal Purposes

Two new sections have been formed in D18.14 on Geotechnics of Waste Management. In its efforts to develop a guide for soil characterization procedures for land based disposal, D18.14 has responded to other related issues. Discussion at a summer meeting resulted in the two groups, which will deal with:

- Equipment decontamination, including methods and procedures for equipment decontamination as a result of investigation or remediation at land based disposal sites; and
- Health and safety considerations as related to investigations and remediation at disposal sites on the ground.

The new sections will develop standards, particularly guidelines, that will be of interest to the waste management industry. All interested people are encouraged to participate. The goals of these two sections will be discussed during the 24-28 Jan. 1988, meetings of Committee D-18 on Soil and Rock in Albuquerque, NM.

For more information about the new sections in D18.14, contact G. David Knowles, Malcolm Pirnie, 4 Corporate Plaza, Washington Ave. Ext., Albany, NY 12203 (518/869-7257); or Robert Morgan, ASTM (215/299-5505).

### Standards Development for Ground Water and Vadose Zone Monitoring Investigations

ASTM Subcommittee D18.21 on Ground Water Monitoring in cooperation with the Association of Ground Water Scientist and Engineers U.S. Environmental Protection Agency, EMSL, is sponsoring the Symposium on Standards Development of Ground Water and Vadose Zone Monitoring Investigations. The symposium will be held on 27-29 Jan. 1988 at Albuquerque, NM. The program for the symposium is as follows:

#### Wednesday, Jan. 27

1:00-2:00 p.m.: Symposium Registration.

2:00-2:10 p.m.: Welcome and Introduction to the Symposium  
David M. Nielsen, C.P.G., Chairman, ASTM Subcommittee D18.21 on Ground Water Monitoring

2:00-4:00 p.m.: Session I—Vadose Zone Monitoring

MODERATOR: Lorne G. Everett, Ph.D., Kaman-Tempo, Inc.;  
Chairman, ASTM Section D-18.21.02

Where is the Vadose Zone and How Do I Get There From Here?—

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Thomas M. Johnson, Levine-Fricke Consulting Hydrogeologists and Engineers

The Art and Science of Measuring Saturated Hydraulic Conductivity in Unsaturated Soil—David Stoner, Stearns and Wheler, Inc.

Methods Available for Sampling Fluids in the Vadose Zone—L. Graham Wilson, Ph.D., University of Arizona, Water Resources Research Center

Monitoring of Immiscible Contaminants in the Vadose Zone—Thomas P. Ballesterio, Ph.D., University of New Hampshire, Water Resources Research Center

Vadose Zone Monitoring Demonstration for Chemical Waste Management, Inc.—Lorne G. Everett, Ph.D., and B. R. Keller, Kaman-Tempo, Inc.; A. M. Gurevich, Chemical Waste Management, Inc.

2:45–3:05 p.m.: Break.

10:30 a.m.–Noon: *Session II—Soil Gas Monitoring*

**MODERATOR:** Lorne G. Everett, Ph.D., Kaman-Tempo, Inc.

Applications and Problems of Soil Gas Investigations—Glenn Thompson, Ph.D., Tracer Research, Inc.

The Role of QA/QC in Soil Gas Surveys—Henry B. Kerfoot, Lockheed—EMSCO

5:00–5:45 p.m.: Question and Answer/Discussion Session for Sessions I and II.

5:45 p.m.: Adjourn for the day—Cash bar reception.

### Thursday, Jan. 28

8:00–9:50 a.m.: *Session III—Hazardous Waste Site Screening Techniques*

**MODERATOR:** to be announced.

Detection of Buried Metals on Hazardous Waste Sites: Magnetic and Electromagnetic Methods—Robert Gilkeson, Doug Layman, and Bruce Thatcher, Roy F. Weston, Inc.

Surface Geophysical Investigations at Coal Tar Contaminated Sites—Paul Gruber, ERM-South, Inc.

A Field Method for Analysis of Soil for Volatile Contamination—Thomas Spittler, Ph.D., U.S. Environmental Protection Agency

Mobile Laboratory Techniques for Real-Time Data Collection for Site Investigations—Lynne M. Preslo, Roy F. Weston, Inc.

Question and Answer/Discussion Session

9:00–10:10 a.m.: Break.

10:10–Noon: *Session IV—Methods for Determining Aquifer Hydraulic Properties*

**MODERATOR:** David M. Nielsen, C.P.G., Chairman, ASTM Subcommittee D18.21

Selection of Hydraulic Test Methods for Monitoring Wells—Curtis Kraemer, John Hankins and Carl Mohrbacher, TRC Environmental Consultants, Inc.

Hydraulic Conductivity Determinations in Unlithified Glacial and Fluvial Materials—Kenneth R. Bradbury, Wisconsin Geological Survey

A Comparison of Slug Test Methodologies for Hydraulic Conductivity Determinations in Fine-Grained Sediments—Beverly Herzog, Illinois State Geological Survey

The Effects of Monitoring Well Installations on Slug Test Results—Mark Gallagher, Mobil Oil Corp.

Question and Answer/Discussion Session

Noon–1:00 p.m.: Lunch.

1:00–2:30 p.m.: *Session V—Water Level Data Collection and Analysis*

**MODERATOR:** David M. Nielsen, C.P.G., Chairman, ASTM Subcommittee D-18.21

Use of Automatic Data Collection Systems During Hydrogeologic Testing—Raymond Scheinfeld, Roy F. Weston, Inc.

Water Level Monitoring—Achievable Accuracy and Precision—H. Randy Sweet, Sweet-Edwards Associates; Dorothy Fisher-Atwood, EMCON Associates; Gerritt Rosenthal

Presentation of Water Level Data—Roger J. Henning, Ph.D., Woodward-Clyde Consultants

Question and Answer/Discussion Session

2:30–2:50 p.m.: Break.

2:50–4:20 p.m.: *Session VI—Monitoring Well Drilling and Soil Sampling*

**MODERATOR:** Robert Pendergast, Geotechnical Engineering, Corp.; Chairman, ASTM Section D18.21.03

Monitoring Well Drilling and Testing in Urban Environments—Stephen A. Smith, Dames and Moore

Vertical Ground Water Quality Profiling using a Screened Hollow-Stem Auger—Robert C. Minning, Keck Consulting Services

Innovative Ground Water Monitoring Well Drilling Methods—Kent Cordry, James M. Montgomery Engineers, Inc.

Question and Answer/Discussion Session

4:20–5:20 p.m.: *Session VII—Ground Water Monitoring in Karst*

**MODERATOR:** David M. Nielsen, C.P.G., Chairman, ASTM Subcommittee D-18.21

Special Problems of Ground Water Monitoring in Karst Terranes—James F. Quinlan, Ph.D., National Park Service

When the Earth is Not Homogeneous or Isotropic—Approaches to

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Monitoring in Karst Terranes—George W. Lee, Jr., C.P.G., Blasland and Bouck Engineers, P.C.

Question and Answer/Discussion Session

5:20 p.m.: *Adjourn for the day—Cash Bar Reception.*

## Friday, Jan. 29

8:00–10:10 a.m.: *Session VIII—Monitoring Well Placement, Design, Development and Rehabilitation*

MODERATOR: Martin N. Sara, C.P.G., Waste Management, Inc.; Chairman, ASTM Section D-18.21.05

Selection of Proper Ground-Water Monitoring Zones—Jeffrey T. Schick, Ground Water Associates, Inc.

Aquifer Flow Path Concepts in Placement of Wells in RCRA Detection Monitoring Programs—Martin N. Sara, Waste Management, Inc.

Rationale for the Design of Monitoring Well Screen and Filter Pack—Ronald Schalla, Batelle Pacific Northwest Labs

Experimental Screen Design Toward Sediment-Free Samples—Charles A. Rich, C. A. Rich and Associates, Inc.

Monitoring Well Development—Why and How—David L. Kill, P.E., Johnson, Division, U.O.P. Inc.

Rehabilitation of Monitoring Wells on an Organic Chemical Spill Site—John Sevee, Sevee and Maher Engineers, Inc.

10:10–10:30 a.m.: Break.

10:30–11:00 a.m.: Question and answer/discussion session for session VIII.

11:00–12:50 p.m.: *Session IX—Monitoring Well Purging and Ground-Water Sampling*

MODERATOR: Beth A. Martin, U.S. Army Environmental Hygiene Agency; Chairman, ASTM Section D-18.21.07

Purging—Are the Rules of Thumb Accurate?—Bob Hockman, Amoco Corp.

Bore-Volume Purging—An Often Mandated Myth—Todd Giddings, Ph.D., Todd Giddings and Associates

Total Versus Dissolved Metals: Implications for Preservation and Filtration—James D. Pennino, C.P.G., Leggett, Brashears and Graham, Inc.

In-Situ Analysis of Aromatic Organics Using Fiber Optics—Wayne Chudyk, Ph.D., Tufts University Dept. of Civil Engineering

12:50–2:00 p.m.: Lunch.

1:30–4:00 p.m.: *Session X—Other Methods in Ground-Water Monitoring Investigations*

MODERATOR: David M. Nielsen, C.P.G., Chairman, ASTM Subcommittee D-18.21

Equipment Decontamination Procedures for Ground Water and Vadose Zone Monitoring Programs—James T. Mickham, C.P.G., O'Brien and Gere

Methods for Evaluating Local Hydrologic Influences—Rudolph Schuller, ERM, Inc.

Monitoring Confined Ground Water—Kenneth D. Schmidt, Kenneth D. Schmidt and Associates

How Flat is Flat? Termination of Remedial Ground Water Pumping—Gisella Spreizer, Geraghty and Miller, Inc.

Statistical Discrimination Testing of Field-Monitored Data—Edward McBean and Frank Rovers, Conestoga-Rovers and Associates

Question and Answer/Discussion Session.

4:00 p.m.: Closing remarks; symposium adjourns.

## Soil and Rock—New Standard

ASTM Test Method for Identification and Classification of Dispersive Clay Soils by the Pinhole Test (D 4647-87), *Annual Book of ASTM Standards*, Vol. 04.08, 1988

This test method presents a direct, qualitative measurement of the dispersibility or deflocculation and consequent colloidal erodibility of clay soils by causing water to flow through a small hole punched in a specimen. D 4647 models the action of water flowing along a crack in an earth embankment. This test method and the criteria for evaluating the test data are based upon results of several hundred tests on samples collected from embankments, channels, and other areas where clay soils have eroded or resisted erosion in nature. The comparison of results from the pinhole test and other indirect tests on hundreds of samples indicates that the results of the pinhole test have the best correlation with the erosional performance of clay soils in nature.

## First International Symposium on Penetration Testing

The U.S. National Society of ISSMFE, in collaboration with ASCE Geotechnical Division, ASCE Florida Section, and the University of Florida Department of Civil Engineering take great pleasure in extending an invitation to the geotechnical community to participate in the **First International Symposium on Penetration Testing** to be held at the Buena Vista Palace Hotel, located on Disney World property, near Orlando during 20–24 March 1988.

The objective of the symposium is to provide an opportunity for practicing geotechnical engineers and researchers to develop reference tests, to share experiences, present new ideas and achievements, and foster enthusiasm for insitu penetration testing.

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# TESTING FORUM

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Following the outstanding successes of ESOPT-I (The First European Symposium on Penetration Testing) in Stockholm in 1974 and ESOPT-II in Amsterdam in 1982, the ISSMFE Technical Committee on Penetration Testing decided in 1982, with the encouragement of Presidents V. de Mello and B. B. Broms, to have an International Symposium in 1988 at a nonEuropean location—hence the birth of ISOPT-1. At its meeting in San Francisco in 1985 the committee accepted an invitation from the Department of Civil Engineering of the University of Florida to host ISOPT-1 at a Walt Disney World location.

All correspondence pertaining to ISOPT-1 should be addressed to: Dr. John L. Davidson, General Secretary, Dept. of Civil Engineering, 346 Weil Hall, University of Florida, Gainesville, FL 32611. Telephone: (Access Code) 1-904-392-0957.

Field trips to the Kennedy Space Center, Walt Disney World Operations Center, the Tampa Bay Skyway Bridge, the Caselberry Sinkhole, and a phosphate mine are tentatively planned.

## **Tentative List of Symposium Subjects**

- (1) Test report—ISSMFE Standard Penetration Test
- (2) Test report—ISSMFE Cone Penetration Test
- (3) Test report—ISSMFE Dynamic Cone Penetration Test
- (4) Test report—ISSMFE Swedish Weight Sounding Test
- (5) Lecture—Current Status of the Piezocone Test
- (6) Lecture—Status of National Standards for Penetration Tests
- (7) Lecture—Current Status of the Marchetti Dilatometer Test
- (8) Lecture—History of Penetration Tests
- (9) Lecture—Calibration of Penetration Tests
- (10) Lecture—New Developments in Penetration Tests & Equipment

- (11) Lecture—New Applications of Penetration Tests in Design Practice
- (12) Lecture—Avoiding Pitfalls and Solving Problems in Penetration Tests
- (13) Invited reviewer—ISOPT-1 and the Future of Penetration Testing—an Academic/Research Viewpoint
- (14) Invited reviewer—ISOPT-1 and the Future of Penetration Testing—a Practitioner's Viewpoint

## **Specialty Sessions—Possible Subjects**

- Dynamic properties and liquefaction
- Large calibration chambers
- Lateral stress effects and their insitu measurement
- Marchetti dilatometer
- New types of penetration tests and new developments
- Offshore testing
- Penetration tests in special soils (carbonate, loess, partially saturated, peats . . .)
- Penetration tests for environmental problems
- Penetration tests for pile capacity
- Penetration tests for shallow foundation design
- Piezocone testing
- Pore-pressure effects on penetration tests
- Push-in pressuremeters
- Quality control of ground improvement methods
- SPT energy calibration
- Statistical application of penetration test data
- Theoretical aspects of penetration testing
- Use of computers in penetration testing

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# ASTM Committee D-18 on Soil and Rock

## Scope

The promotion of knowledge; stimulation of research; the development of specifications and methods for sampling and testing; and the development of nomenclature, definitions, and practices relating to the properties and behavior of soil, rock, and the fluids contained therein. Excluded are the uses of rock for building stone and for constituent materials in portland cement and bituminous paving and structures coming under the jurisdiction of other committees. Included are the properties and behavior of: (1) soil-like materials such as peats and related organic materials, (2) geotextiles, and (3) fluids occupying the pore spaces, fissures, and other voids in soil and rock insofar as such fluids may influence the properties, behavior, and uses of the soil and rock materials.

## Officers

**Chairman:** W. G. Shockley, 326 Lake Hill Dr., Vicksburg, MS 39180.

**First Vice-Chairman:** R. E. Gray, GAI Consultants, 570 Beatty Rd., Monroeville, PA 15146.

**Vice-Chairman:** Robert C. Deen, University of Kentucky, Kentucky Transportation Research Program, Transportation Research Bldg., Lexington, KY 40506.

**Vice-Chairman:** P. M. Jarrett, Royal Military College, Department of Engineering, Kingston, Ontario, Canada K7L 2W3.

**Vice-Chairman:** H. J. Pincus, University of Wisconsin—Milwaukee, Department of Geological Sciences, Sabin Hall, Milwaukee, WI 53201.

**Vice-Chairman:** R. S. Ladd, Woodward-Clyde Consultants, 1425 Broad St., Clifton, NJ 07012.

**Secretary:** R. J. Stephenson, U.S. Army Corps of Engineers, South Atlantic Division Lab., 611 S. Cobb Dr., Marietta, GA 30060.

**Membership Secretary:** H. F. Hanson, Los Angeles City, Department of Water and Power, P.O. Box 111, (510 E. Second St.), Los Angeles, CA 90051.

## Subcommittees and Their Chairmen

### TECHNICAL

#### **D18.01 Surface and Subsurface Reconnaissance**

C. B. Petterson

#### **D18.02 Sampling and Related Field Testing for Soil Investigations**

R. E. Brown

#### **D18.03 Texture, Plasticity, and Density Characteristics of Soils**

T. S. Hawk

#### **D18.04 Hydrologic Properties of Soil and Rock**

D. E. Daniels

#### **D18.05 Structural Properties of Soils**

R. T. Donaghe

#### **D18.06 Physico-Chemical Properties of Soils and Rocks**

K. Hoddinott

#### **D18.07 Identification and Classification of Soils**

K. Hoddunott

#### **D18.08 Special and Construction Control Tests**

J. R. Talbot

#### **D18.09 Dynamic Properties of Soils**

R. L. Ebelhar

#### **D18.10 Bearing Tests of Soils in Place**

G. Y. Baladi

#### **D18.11 Deep Foundations**

E. T. Mosley

#### **D18.12 Rock Mechanics**

W. G. Austin

#### **D18.13 Marine Geotechnics**

R. C. Chaney

#### **D18.14 Geotechnics of Waste Management**

G. D. Knowles

#### **D18.15 Stabilization by Additives**

M. C. Anday

#### **D18.16 Chemical Grouting**

R. H. Karol

#### **D18.17 Rock for Erosion Control**

C. H. McElroy

#### **D18.18 Peats and Organic Soils**

A. L. Burwash

#### **D18.19 Frozen Soil and Rock**

C. W. Lovell

#### **D18.20 Impermeable Barriers**

N. J. Cavalli

#### **D18.21 Ground Water Monitoring**

D. M. Nelson

### ADMINISTRATIVE

#### **D18.91 Editorial**

G. N. Durham

#### **D18.92 Geotechnical Testing Journal**

V. P. Drnevich

#### **D18.93 Nomenclature for Soil and Rock Mechanics**

A. I. Johnson

#### **D18.94 Education and Training**

J. D. Antrim

#### **D18.95 Information Retrieval and Data Automation**

W. A. Marr

#### **D18.96 Research Steering and Standards Development**

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#### **D18.97 Awards**

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