

TESTING FORUM

Call for Papers

Symposium on Superfund Risk Assessment in Soil Contamination Studies

Papers are invited for a Symposium on Superfund Risk Assessment in Soil Contamination Studies sponsored by ASTM Committee D-18 on Soil and Rock and the U.S. Army Environmental Hygiene Agency. The symposium will be held 30–31 Jan. 1992 in New Orleans, Louisiana in conjunction with the 26–30 Jan. 1992 standards development meetings of Committee D-18.

The objective of this symposium is to present the current Environmental Protection Agency (EPA)-approved methodology and state-of-the-art modification to handle the frequently occurring site specific and real life problems in assessing the risk of hazardous waste sites.

Original papers which represent innovative approaches to topics listed below are solicited:

Data Validation

- Determination of the number of samples
- Background determination
- Tests of significance above background

Data Reduction

- Choice of contaminants of concern
- Handling of non-detections
- Handling tentatively identified compounds
- Laboratory contaminants versus actual contaminant
- Geometric versus arithmetic means

Toxicity Assessment

- Assessing toxicity without data
- Assessing toxicity without EPA multipliers
- Estimating cancer potency and reference doses
- Assessing animal to human safety factors

Risk Characterization

- Choice of intake models and assumptions
- Choice of worst case contaminant level

- Estimating soil ingestion
- The use of a shower model
- Reasonable versus unreasonable scenarios
- Estimating fugitive dust and vapor exposure without air sampling data
- Relationships between groundwater/surface water
- Estimating risk to non-human receptors

The symposium will be organized into four sessions concerning the topics outlined above. The papers selected for presentation will be 15 to 20 minutes in duration. Each session may also include an informal poster session presentation.

Prospective authors are requested to submit a title, a 300 to 500 word abstract, and the ASTM Paper Submittal Form below by January 25, 1991 to Dorothy Savini, Symposia Operations, ASTM, 1916 Race Street, Philadelphia, PA 19103-1187, Telephone: 215/299-5413. Additional Paper Submittal Forms are available from Ms. Savini or from the symposium chairmen.

A Special Technical Publication (STP) based on the symposium proceedings is anticipated by ASTM. Main authors will receive a complimentary copy of the volume(s) containing their papers. The main author is the author corresponding with the ASTM publications staff. All published authors may purchase reprints of the papers at cost. Authors will be notified of their acceptance for presentation by March 15, 1991 by the symposium chairmen.

Final manuscripts for the STP based on this symposium are due by November 29, 1991. This deadline will be rigidly enforced. All papers not submitted to ASTM by this deadline will not be accepted for the STP; these papers may be forwarded to the appropriate ASTM journal to be considered for publication. Papers will be approved through the ASTM peer review process for inclusion in the STP even if presentation at the symposium is not possible. ASTM may print and distribute accepted abstracts with the approval of the symposium chairman.

More information is available from Symposium Chairmen Keith Hoddinott, U.S. Army Environmental Agency, ATTN: HSHB-ME-SE, Aberdeen Proving Grounds, MD 21010-5422, 301/671-2953; and William P. McKinnell, West Hasmet Corp., 7670 South Vaughn Ct., No. 200, Englewood, CO 80112, 303/792-2535.

TESTING FORUM

Note to Authors

Many authors who prepare papers or technical notes for the *ASTM Geotechnical Testing Journal* are not cognizant of the distinction between the words *sample* and *specimen*. When preparing material for the *Journal*, authors should be especially sensitive to correct usage of these words. To promote uniformity and to make the editorial process more efficient, the following definitions are presented.

DEFINITIONS

Sample—A representative portion of a whole; a small segment or quantity taken as evidence of the character of an entire group or lot. For geotechnical work, a *sample* is the material taken in the field as representative of a given soil or rock strata, deposit, or area. *Samples* are often shipped to a laboratory for study.

Specimen—A particular single item, part, aspect, or incident that is typical and indicative of the nature, character, or quality of others in the same class or group (sample). A unit, as of a mineral, a soil, or a rock core, that is deliberately selected for examination or study and is usually chosen as typical of its kind. A portion of material for use in testing. Again, for geotechnical work, a *specimen* is a representative part or portion of the larger *sample*, and individual *specimens* are prepared for laboratory testing.

L. David Suits Elected Chairman of ASTM's Committee on Geosynthetics

L. David Suits, employed by the New York State Department of Transportation (NYSDOT) in Albany, will serve as Chairman of Committee D-35 on Geosynthetics. He will lead the 229 member standards-writing committee for a two-year term.

Committee D-35 is concerned with the formulation of test methods, specifications, guides, practices, and terminology dealing with geosynthetics. This would include, but not limit, applications such as roadway stabilization and repair, erosion control, and soil damage and reinforcement.

Suits earned his B.S. and M.S. degrees from Clarkson University in 1967 and 1969. Employed by NYSDOT for 22 years, he has been overseeing projects which include model testing designed to develop department specifications for underdrain filter material. He is also involved with investigating the constant rate of strain consolidation testing, triaxial extension testing, and resilient modulus testing.

A resident of Albany, Suits received ASTM's Award of Merit in 1986. He is also a member of the Transportation Research Board, the International Geosynthetics Society, and the North American Geosynthetics Society.

Committee D-35 on Geosynthetics is one of 134 ASTM tech-

nical committees. Organized in 1898, ASTM (American Society for Testing and Materials) is one of the largest voluntary standards development systems in the world.

ASTM European Office Opened in England

In order to better serve its European members, ASTM opened an office in Hertfordshire, England, on May 1, 1990.

The new office will serve to improve communication between ASTM's European members and ASTM Headquarters in Philadelphia. The office will answer questions about ASTM, coordinate symposia and standards technology training courses held in Europe, and provide rooms for standards development meetings.

Bill Keeshan will serve as office manager. Inquiries can be addressed to him at the ASTM European Office, 27-29 Knowl Piece, Wilbury Way, Hitchin, Herts SG4 0SX, England, Telephone: 0462 437933, FAX: 0462 433678, Telex: 825684 ATPG.

Organized in 1898, ASTM (American Society for Testing and Materials) is one of the largest voluntary standards development systems in the world.

TESTING FORUM

Note to Authors

A new author-date reference style has been instituted for the *Geotechnical Testing Journal* beginning in 1991. Authors who prepare papers for GTJ should be cognizant of the new style. Authors' names and publication dates are cited in the text. An alphabetical list of all cited references is placed at the end of the article.

The writer of the article must check that all references have at least one text citation and that all text citations are traceable to a complete reference. Lengthy strings of numerous works within one text citation cannot be accommodated in this reference system since they disrupt the continuity of the text.

TEXT CITATION STYLE

1. The basic form in the author-date system consists of the last name of an author and the publication year as follows:
(Jenkins 1980)
Two authors are handled as follows:
(Jenkins and Smith 1982)
Use et al. for three or more authors:
(Jenkins et al. 1969)
2. "Author" in this reference system is defined as the name under which the work is alphabetized in the list of works cited at the end of the article. Thus "author" may refer to an editor, compiler, or an organization as well as an individual author or group of authors. Anonymous is not an acceptable designator for the author of a referenced work. If authorship cannot be determined, an article is listed under its title, and a short title is used in the citation.
3. The citation is usually set off in parentheses just before a mark of punctuation, but it can be handled as part of the sentence. Both styles are illustrated below:
The test was carried out successfully (Carter 1980).
Carter (1980) carried out a successful test.
4. Two works by the same author in the same year are set up with letters as designators as follows:
(Kelly 1986a, 1986b)
The publication dates in the full reference list must then be keyed to 1986a and 1986b by the writer of the article.
5. Several works by one author in different years are handled as follows:
(Kelly 1982, 1985, 1988)
6. Several works by different authors are handled as follows:
(Light 1980; Wong 1982; Smith 1985)
7. When an article or book has no individual author, editor, or compiler named and is sponsored by a corporation, government agency, association, or other named group, use the name of the sponsor as the author's name in both the text reference and the alphabetical reference list. If the whole name is long and cumbersome, abbreviate it to a manageable size within the text citation but make sure that the ab-

continued

TESTING FORUM

continued

breviated form is easily traceable to the full reference. For example:
Composites Research Institute and Materials Structural Analysis Society, 1989, *Composites for Small Aircraft Applications*, University of Pennsylvania Press, Philadelphia, PA, pp. 25–30.
Citation would be (Composites Research Institute 1989).

ALPHABETICAL REFERENCE LIST STYLE

All cited author references are listed alphabetically by the last name of the first author at the end of each paper. Please see definitions of “author” in the text citation above. Each reference must be complete containing sufficient information for the reader to locate the cited source. For the reader’s convenience, the year of publication is placed immediately after the author’s name. If there is more than one article by the same author, list the references for that author chronologically from earliest to most recent work. References for books and periodicals are illustrated below.

Books:

Last names and initials of all authors, year of publication, “title of the paper,” *title of the book*, publisher’s full name, publisher’s location, inclusive page numbers.

Periodicals:

Last names and initials of all authors, year of publication, “title of the paper,” *full title of the periodical* (do not abbreviate), volume, number, inclusive page numbers.

Geotechnical Testing Journal

Table of Contents, Volume 13

1990

No. 1, March

Pressuremeter Creep Testing in Ice: Calibration and Test Procedures—BRUCE H. KJARTANSON, DONALD H. SHIELDS, AND LEN DOMASCHUK	3
Geotechnical Properties of Expanded Shale Lightweight Aggregate—ARUN J. VALSANGKAR AND THOMAS A. HOLM	10
An Automatic Feedback System for Resonant Column Testing—DEREK V. MORRIS	16
Generalized Calibration of a Nuclear Moisture/Density Depth Gauge—PETER H. MORRIS AND DAVID J. WILLIAMS	24
Design of a Large Calibration Chamber—BRYAN P. SWEENEY AND G. WAYNE CLOUGH	36
<i>Technical Note:</i> Axial Deformation Measurement in Repeated Load Triaxial Testing—ANDREAS NATAATMADJA AND ALAN K. PARKIN	45
<i>Technical Note:</i> Shear Zone Characterization in Sands by Carbowax Impregnation—ROMAN D. HRYCIW AND MASYHUR IRSYAM	49
<i>Technical Note:</i> Evaluation of Allowable Pressure Under Foundations—YAKOV M. REZNIK	53
<i>Technical Note:</i> Statistical Description of Triaxial Shear Test Results—MARK R. SCHOENEMANN AND MARVIN R. PYLES	58
Discussion on "The Use of Hall Effect Semiconductors in Geotechnical Instrumentation" by C. R. I. Clayton, S. A. Khatrush, A. V. D. Bica, and A. Siddique—F. TATSUOKA, S. SHIBUYA, S. GOTO, T. SATO, AND X. J. KONG	63
Closure to Discussion by F. Tatsuoka et al.—C. R. I. CLAYTON ET AL.	65
<i>Book Review</i> on Rock Mechanics Principles in Engineering Practice by J. A. Hudson—ALLEN W. HATHEWAY	68
<i>Testing Forum</i>	69

No. 2, June

Automatic Back-Pressure Saturation Device for Triaxial Testing—THOMAS L. BRANDON, J. MICHAEL DUNCAN, AND ALLEN W. CADDEN	77
Transition from Maximum Tension Line to Actual Failure Surface in Reinforced Soil Model Walls—RICHARD M. ARENICZ	83
Sampling of Saturated and Unsaturated Sands by Freezing—J.-M. KONRAD	88
Laboratory Measurement of Small Strain Shear Modulus Under K_0 Conditions—THOMAS G. THOMANN AND ROMAN D. HRYCIW	97
Effects of Oversize Particles on the Density of Clean Granular Soils—RICHARD J. FRAGASZY, WEIZHI SU, AND FARHAT H. SIDDIQI	106
Physical and Statistical Models for Bulking of Sand—D. L. NEEMA, A. N. PATEL, AND B. L. SHARDA	115
<i>Technical Note:</i> Automated Measurement of Slurry Surface Settlement—SIEW-ANN TAN, THIAM-SOON TAN, AND KEE MING LIANG	125
<i>Technical Note:</i> Geotomography in Site Investigations: Simulation Study—ANDREW G. TALLIN AND CARLOS SANTAMARINA	129
<i>Technical Note:</i> Inadequacy in the Classification of Coarse-Grained Soils—NAGARATNAM SIVAKUGAN	134
<i>Technical Note:</i> Microwave Drying of Soils—D. JOSEPH HAGERTY, C. ROBERT ULLRICH, AND MARCELLA M. DENTON	138
<i>Technical Note:</i> Microwave Drying of Highly Plastic and Organic Soils—D. JOSEPH HAGERTY, C. ROBERT ULLRICH, AND CAROL A. CALLAN	142
Discussion of "Compaction Control and the Index Unit Weight" by Steve J. Poulos—IRAJ NOORANY	146
Closure to Discussion by Iraj Noorany—STEVE J. POULOS	147
<i>Testing Forum</i>	148

No. 3, September

Automated Triaxial Testing of Soft Clays: An Upgraded Commercial System—THOMAS C. SHEAHAN, JOHN T. GERMAINE, AND CHARLES C. LADD	153
Effects of Arching on Response Time of Miniature Pore Pressure Transducer in Clay—BRUCE L. KUTTER, NAMASIVAYAM SATHIALINGAM, AND LEONARD R. HERRMANN	164
Influence of Soil Structure on the Stress-Strain Behavior of Sand-Bentonite Mixtures—ALAN W. L. WAN, JAMES GRAHAM, AND MALCOLM N. GRAY	179
Effect of Backfill Thrust on Vertical Pressure Distribution in Reinforced Soil Model Walls—YASMIN ASHAARI AND RICHARD M. ARENICZ	188

Frequency Response of Diaphragm Pore Pressure Transducers in Dynamic Centrifuge Model Tests—FOOK-HOU LEE	201
Measuring Strains in Buried Flexible Pipes—CHARLES A. MOORE AND CHRISTINE F. DONALDSON	208
Field Hydraulic Conductivity Tests for Compacted Soil Liners—JOSEPH O. SAI AND DAVID C. ANDERSON	215
<i>Technical Note:</i> A Biaxial Apparatus for Testing Soils—ANDREW DRESCHER, IOANNIS VARDOULAKIS, AND CHUNHUA HAN	226
<i>Technical Note:</i> Preparation of Grouted Sand Specimens for Dynamic Testing—TZYI-SHIU CHANG, RICHARD D. WOODS, AND NENGHUI H. LI	235
<i>Technical Note:</i> The Preparation of Hollow Cylinder Specimens from Undisturbed Tube Samples of Soft Clay—MARK TALESNICK AND SAM FRYDMAN	243
<i>Technical Note:</i> Statistical Evaluation of Bangkok Clay Shear Strength Parameters—MOLLA M. ALI	250
<i>Technical Note:</i> Suction-Moisture Content Calibration of Filter Papers from Different Boxes—JOHN W. SIBLEY, GORDON K. SMYTH, AND DAVID J. WILLIAMS	257
Discussion of “A Device for Lateral Strain Measurement in Triaxial Tests with Unsaturated Specimens” by Dimitrios Kolymbas and Wei Wu—S.-C. R. LO	263
Closure to Discussion by S.-C. R. Lo—DIMITRIOS KOLYMBAS AND WEI WU	264
<i>Testing Forum</i>	266

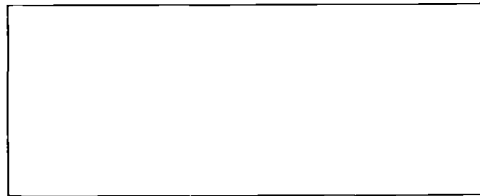
No. 4, December

Design and Testing of a Synthetic Clay Soil—MICHAEL J. LEWIS, JR. AND GEOFFREY W. BLANEY	269
Influence of Storage and Reconsolidation Procedures on Clay Properties—JAMES GRAHAM, MARK R. JAMIESON, DAVID Y.-F. HO, AND FETHI AZIZI	280
Split-Hopkinson Pressure Bar Testing of Unsaturated Sand—WAYNE A. CHARLIE, C. ALLEN ROSS, AND STEVEN J. PIERCE	291
Abrasion Tests for Railroad Ballast—ERNEST T. SELIG AND DEBRA L. BOUCHER	301
An Experimental Laboratory Facility for Studying Shock-Induced Liquefaction—GEORGE E. VEYERA AND WAYNE A. CHARLIE	312
Simplified Heave Prediction Model for Expansive Shale—ABDULMOHSIN W. DHOWIAN	323
Design, Construction, and Testing of a Large-Scale, Radial Fracture Flow Model—LEE C. ATKINSON AND JOHN E. GALE	334
<i>Technical Note:</i> Determination of Design Parameters of a Mesh-Type Soil Reinforcement—SIK-CHEUNG ROBERT LO	343
<i>Technical Note:</i> Effects of Imperfect Fixity in Spring-Top Resonant Column Tests—TUKKI MIN, VINCENT P. DRNEVICH, AND JIANREN WANG	351
<i>Technical Note:</i> Corrections for Membrane Strength in the Triaxial Test—RALPH H. KUERBIS AND YOGINDER P. VAID	361
<i>Technical Note:</i> Measurement of B-Values Less Than Unity for Thinly Interbedded Varved Clay—K. D. EIGENBROD AND J. P. BURAK	370
<i>Technical Note:</i> Classification of Expansive Soils by Sediment Volume Method—ASURI SRIDHARAN, SUDHAKAR M. RAO, AND SANJEEV JOSHI	375
<i>Technical Note:</i> A New Filter Material for Measuring Soil Suction—JOHN W. SIBLEY AND DAVID J. WILLIAMS	381
<i>Testing Forum</i>	385
<i>Index</i>	391

MOVING?

To insure uninterrupted service on your *GTJ* subscription, please notify us at least six weeks before you move.

1. Attach your address label from a recent issue in the space provided opposite. (If label is not available, be sure to give your old address, including Zip Code.)



2. Print your name, membership no., and address below. (Be sure to include Zip Code.)

3. Mail entire notice to: **ASTM**

Subscription Dept.—GTJ
1916 Race St.
Philadelphia, PA 19103

Name _____ Membership No. _____

New Address _____

City _____ State _____ Zip Code _____

(please print or type the above information)

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: soil-like materials such as peats and related organic materials, and 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.

The area of interest of the Committee is the testing of soil, rock and such materials that may be intimately associated with soil and rock. It will be the policy of this Committee to avoid, insofar as possible, dealing with methods of design of engineering structures and all those features of general practice in the use of soil and rock which may not involve the development of standards. It will, however, be considered within the scope of the Committee's work to promote by every desirable means the close cooperation of other organizations and committees whose field of endeavor is closely allied to that of soil and rock testing.

Officers

Chairman: R. S. Ladd, Woodward-Clyde Consultants, Clifton, NJ 07012.

First Vice-Chairman: R. J. Stephenson, U.S. Army Corps of Engineers, Marietta, GA 30060.

Vice-Chairman: C. W. Lovell, Purdue University, School of Civil Engineering, West Lafayette, IN 47906.

Vice-Chairman: J. R. Talbot, U.S.G. AGRC, Soil Conservation Service, P.O. Box 2890, Washington, DC 20013.

Vice-Chairman: H. J. Pincus, P.O. Box 275987, San Diego, CA 92128.

Vice-Chairman: T. S. Hawk, Baker Engineers, Coraopolis, PA 15108.

Secretary: C. H. McElroy, Soil Conservation Service, Fort Worth, TX 76115.

Membership Secretary: J. F. Christiansen, Empire Soils Investigations, Inc., 140 Telegraph Rd., Middleport, NY 14105.

Subcommittees and Their Chairmen

TECHNICAL

D18.01 Surface and Subsurface Reconnaissance

C. B. Petterson

D18.02 Sampling and Related Field Testing for Soil Investigations

J. Horton

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

T. S. Hawk

D18.04 Hydrologic Properties of Soil and Rock

D. E. Daniel

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

A. K. Howard

D18.08 Special and Construction Control Tests

K. R. Rademacher

D18.09 Dynamic Properties of Soils

R. J. 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

W. S. Adaska

D18.16 Chemical Grouting

R. H. Karol

D18.17 Rock for Erosion Control

C. H. McElroy

D18.18 Peats and Organic Soils

T. B. Edil

D18.19 Frozen Soil and Rock

C. W. Lovell

D18.20 Impermeable Barriers

N. J. Cavalli

D18.21 Ground Water Monitoring

D. M. Nielsen

ADMINISTRATIVE

D18.91 Editorial

G. N. Durham

D18.92 Geotechnical Testing Journal

P. Knodel

D18.93 Terminology for Soil, Rock, and Contained Fluids

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

H. F. Hanson

D18.97 Awards

R. G. Packard

D18.98 Hogentogler Award

R. J. Stephenson

D18.99 Quality Control

P. A. Spellerberg