JEFFREY C. EVANS

Chair and Professor
Department of Civil and Environmental Engineering
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EDUCATION

Lehigh University: Ph.D., Civil Engineering
Purdue University: M.S., Civil Engineering
Clarkson University: B.S., Civil and Environmental Engineering

REGISTRATION

Registered Professional Engineer: State of Michigan

PROFESSIONAL HISTORY

Bucknell University, Department of Civil and Environmental Engineering
- Chair and Professor 2003-present;
- Presidential Professor, 2001-2003;
- Professor, 1994-2001;
- Associate Professor, 1988-1994;
- Assistant Professor, 1985-1988

Colorado State University, Affiliate Professor of Civil and Environmental Engineering, 2002-present
University of Nottingham, Nottingham, England, Visiting Academic, 1998-1999 (sabbatical)
Warren Spring Laboratory, Stevenage, England, Sr. Scientific Officer, 1991-1992 (sabbatical)
Lehigh University, Adjunct Associate Professor of Civil Engineering, 1984-1985
Woodward-Clyde Consultants, Staff, Project and Senior Project Engineer, 1975-1985
U.S. Army, Corps of Engineers Reserves, 2nd Lieutenant, 1st Lieutenant and Captain, 1973-1981
Purdue University, Teaching Assistant, 1973-74
Mobile Drilling Company, Research Engineer, 1974
Karteganer Associates, Staff Engineer, 1973

EXPERIENCE SUMMARY

Dr. Evans has over thirty-five years of teaching, research and consulting experience with a wide variety of geotechnical and environmental projects. Projects ranged from planning and supervision of subsurface explorations to engineering analyses for design and construction. Project experience during the over ten years with Woodward-Clyde Consultants included geotechnical and environmental studies for small to large single-discipline and multi-disciplinary projects. Contributions came at all levels from entry level staff engineering assignments to senior project engineer to project manager. At Bucknell University, teaching experience includes courses in geotechnical engineering, environmental geotechnology; ground improvement engineering, engineering graphics with computer-aided drafting, science of materials, comprehensive senior design and short-term study abroad in the UK, Argentina, Norway and Sweden. Research has focused on the fundamentals of slurry trench cutoff wall behavior, the physio-chemical effects of hazardous wastes upon soil and grout properties, the nature and applications of organophilic and zeolitic clays, and stabilization of petroleum sludge. Consulting experience while an academic at Bucknell University included expert opinions for citizens concerned with foundation and landfill stability issues in New York, for owners with substantial cost over-runs on deep foundations, a contractor regarding his involvement with a building exhibiting excessive settlement, and a designer regarding lagoons that failed during operation. Other consulting projects include consulting on issues with slurry walls in Florida, Wisconsin, Arizona, Delaware, Ohio, Colorado, Utah and Quebec, Canada. On-going consultation includes foundation stability of highway wire-rope safety barriers and the Herbert Hoover Dike in Florida.

JEFFREY C. EVANS

SUMMARY OF TEACHING EXPERIENCE

Taught a variety of courses since coming to Bucknell University in 1985 including:

- ENGR101 Engineering Graphics
- ENGR242 Materials Engineering
- CENG350 Geotechnical Engineering I (Soil Mechanics)
- CENG450 Geotechnical Engineering II (Foundation Engineering
- CENG451 Environmental Geotechnology
- CENG452 Ground Improvement Engineering
- ENGR290 Engineering in a Global and Societal Context
  2004 and 2006 in England
  2007 in Argentina
  2009 in Sweden and Norway

AFFILIATIONS

American Society of Civil Engineers
American Society of Testing and Materials
ADSC: The International Association of Foundation Drilling

HONORS and AWARDS

American Society of Engineering Education, Civil Eng. Division, 2008 Glen L. Martin Best Paper.
Bucknell University, Presidential Professor, 2001 to 2003.
Bucknell University, Class of '56 Lectureship, Award for Inspirational Teaching, 1997.
Bucknell University Alumni Faculty Fellowship Award, 1992.
The Earth Technology Corporation Fellowship Award, 1988.
Engineering Foundation/American Society of Civil Engineers Research Initiation Grant, 1987.
Woodward-Clyde Consultants "Young Professional of the Year" award, 1983.

PUBLICATIONS

Peer Reviewed Publications

Yeboah, N. and Evans, J. C. "The Role of Bentonite in Slag-Cement-Bentonite Slurry Wall Performance: in preparation for *ASCE J. of Geotechnical and Geoenvironmental Engineering, 2010.*

Ruffing, D. G., Evans, J. C., and Malusis, M. A., (2010) "Prediction of Earth Pressures in Soil-Bentonite Cutoff Walls," *ASCE GeoFlorida 2010 Advances in Analysis, Modeling and Design GSP 199,* pp. 2416-2425.

Lynch, D. R., Russell, J. S., Mason, J. M. and Evans, J. C. "Claims on the Foundation: Professionalism and its Liberal Base," *ASCE Journal of Professional Issues in Engineering Education and Practice,* Volume 135, Issue 3, pp. 109-116 (July 2009).

Malusis, M. A., Barben, E. J., and Evans, J. C. "Hydraulic Conductivity and Compressibility of Soil-Bentonite Backfill Amended with Activated Carbon" *ASCE Journal of Geotechnical and Geoenvironmental Engineering,* Volume 135, No. 3, pp. 664-672 (May 2009).

Evans, J. C. and Garbin, E. J., (2009) "The TRD Method for *In Situ Mixed* Vertical Barriers," *Proceedings of the U.S.-China Workshop on Ground Improvement Technologies GSP188,* pp. 271-280.

Lynch, D. R., Russell, J. S., Evans, J. C. and Sutterer, K. G. (2008), "Beyond the Cognitive: The Affective Domain, Values and Achievement of the Vision," *ASCE J. of Professional Issues in Engineering Education and Practice,* Vol.135, No.1, pp.47-56. (January 2009).

Malusis, M. A., Evans, J. C., McLane, M. H. and Woodward, N. R., (2008) "A Miniature Cone for Measuring the Slump of Soil Bentonite Slurry Trench Cufoff Wall Backfill," *ASTM Geotechnical Testing Journal,* Vol. 31, No. 5, (September 2008).

Evans, J. C. and Lynch, D. R., "Foundational Outcomes of the New Civil Engineering Body of Knowledge, *Proceedings of the 2007 ASEE Annual Conference & Exposition,* Pittsburgh, PA, June 23-25, 2008.

Evans, J. C. and Malusis, M. A**.** Geo-Challenge as a Curricular Activity in Geotechnical Engineering Education, *ASCE GeoCongress 2008, Geosustainability and Geohazard Mitigation , GSP 178,* pp. 773-780.

Barben, E. J., Malusis, M. A. and Evans, J. C., "Slump Evaluation of Soil-Bentonite Backfill Amended with Activated Carbon" *ASCE GeoCongress 2008,Geotechnics of Waste Management GSP177*, pp. 636-643.

Evans, J. C., Shackelford, C. D., Yeo, S. S. and Henning, J., (2008) "Membrane Behavior of Soil-Bentonite Slurry-Trench Cutoff Walls" *Soil and Sediment Contamination: An International Journal*, 17:316-322.

Evans, J. C. and Lynch, D. and Lange, D. "The Role of Humanities and Social Sciences in the Civil Engineering Body of Knowledge," *Proceedings of the 2007 ASEE Annual Conference & Exposition*, Honolulu, Hawaii, June 24-27, 2007

Evans, J. C, "The TRD Method: Slag-Cement Materials for *In Situ* Mixed Vertical Barriers" *Geo-Denver 2007: New Peaks in Geotechnics, ASCE Geotechnical Special Publication GSP-172 Soil Improvement*, February, 2007

Henning, J., Evans, J. C. and Shackelford, C. D., "Membrane Behavior of Soil-Bentonite Slurry Trench Cutoff Wall Backfill," *ASCE J. of Geotechnical and Geoenvironmental Engineering*, Vol. 132, No. 10, pp. 1243-1249.

Evans, J. C. and Opdyke, S. M., "Strength, Permeability, and Compatibility of Slag-Cement-Bentonite Slurry Wall Mixtures for Constructing Vertical Barriers," *Proceedings of the 5th International Conference on Environmental Geotechnics*, Cardiff, Wales, June 26-30, 2006, Thomas Telford Publishing, UK.

Evans, J. C., and McGinnis, R. G., "Short-term Study Abroad: Engineering in a Global and Societal Context, *Proceedings of the 2006 ASEE Annual Conference and Exposition: Excellence in Engineering Education*; Chicago, Ill, USA, June 18-21, 2006.

Yeo, S.-S., Shackelford, C. D., and Evans. J. C., (2006)"Consolidation and Hydraulic Conductivity of Nine Model Soil-Bentonite Backfill," *ASCE J. of Geotechnical and Geoenvironmental Engineering*, Vol. 131, No. 10, pp. 1189-1198.

Opdyke, S. M. and Evans, J. C. (2006) "Slag-Cement-Bentonite Slurry Walls," *ASCE J. of Geotechnical and Geoenvironmental Engineering*, Vol. 131, No. 6, pp. 673-681.

Yeo, S.-S., Shackelford, C. D., and Evans. J. C., "Membrane Behavior of Model Soil-Bentonite Backfill Mixtures," *ASCE J. of Geotechnical and Geoenvironmental Engineering*, Vol. 131, No. 4, pp. 418-429.

Evans, J. C. and Ryan, C. "Time-Dependent Strength Behavior of Soil-Bentonite Slurry Wall Backfill'" *Waste Containment and Remediation: Proceedings of the Geo-Frontiers 2005 Congress*, Geotechnical Special Publication No. 142, January, 2005.

Filz, G. M., Evans, J. C. and Britton, J. P., "Soil-Bentonite Hydraulic Conductivity: Measurement and Variability, Proceedings of the 12th PanAmerican Conference on Soil Mechanics and Geotechnical Engineering, VGE, Essen, Germany, pp. 1323-1328, June, 2003.

Prince. M. J., Maneval, J. E, and Evans, J. C. "Analysis of Boundary Conditions for Contaminant Transport through Adsorptive, Low-Permeability Slurry trench Cutoff Walls," *ASCE Specialty Conference, GeoDenver 2000*, ASCE Geotechnical Special Publication, August, 2000.

Evans, J. C. and Dawson. A. R., "Slurry Walls for the Control of Contaminant Migration: A Comparison of United Kingdom and United States Practices," *ASCE Specialty Conference on Geo-Engineering for Underground Facilities*, ASCE Geotechnical Special Publication No. 90, June, 1999.

Evans, J. C. and Prince. M. J., "Additive Effectiveness in Minerally-Enhanced Slurry Walls," *ASCE Specialty Conference on In Situ Remediation of the Geoenvironment*, ASCE Geotechnical Special Publication No. 71, October, 1997.

Evans, J. C., Adams, T. L. and Prince. M. J., "Metals Attenuation in Minerally Enhanced Slurry Walls," *Proceedings of the 1997 International Containment Technology Conference*, February, 1997.

Evans, J. C. Costa, M. and Cooley, B., "The State of Stress is Soil-Bentonite Slurry Trench Cutoff Walls," *ASCE Specialty Conference on Characterization, Containment, Remediation and*

Performance in Environmental Geotechnics, The Geoenvironment 2000, ASCE Geotechnical Special Publication No. 46, February, 1995.

Evans, J. C. "Hydraulic Conductivity of Vertical Cutoff Walls," *Hydraulic Conductivity and Waste Contaminant Transport in Soils, ASTM STP 1142*, D. E. Daniel and S. J. Trautwein, Eds., American Society for Testing and Materials, Philadelphia, 1994, pp. 79-94.

Tosca, S. Z., and Evans, J. C., "The Effects of Fillers and Admixtures on Grout Performance," *ASCE Specialty Conference on Grouting, Soil Improvement, and Geosynthetics, 1992*, ASCE Geotechnical Special Publication, January, 1992.

Evans, J. C. and Alther, G., "Hazardous Waste Stabilization using Organically Modified Clays," *Geotechnical Engineering Congress, 1991*, ASCE Geotechnical Special Publication No. 27, June, 1991, pp. 1149-1161.

Evans, J. C., Sambasivam, Y. and Zarlinski, S. J., "Attenuating Materials in Composite Liners," *Waste Containment Systems: Construction, Regulation, & Performance*, ASCE Geotechnical Special Publication No. 26, November, 1990, pp. 246-263.

LaGrega, M. D., Evans, J. C., Acuna, C. O., Zarlinski, S. J., and Hall, D. S., "Stabilization of Acidic Refinery Sludges," *Journal of Hazardous Materials*, 24 (1990), pp. 169-187.

Weaver, K. D., Evans, J. E. and Pancoski, S. E., "Grout Testing for a Hazardous Waste Application" *Concrete International*, Journal of the American Concrete Institute, Vol. 12, No. 7, July, 1990, pp. 45-47.

Evans, J. C., Pancoski, S. E., "Organic Waste Treatment with Organically Modified Clays" *Proceedings of the 3rd International Conference on New Frontiers for Hazardous Waste Management*, Pittsburgh, PA, September 10-13, 1989, EPA/600/9-89/072, pp. 48-57.

Evans, J. C. and Pancoski, S. E., "Organically Modified Clays" *Transportation Research Record* 1219, Geotechnical Engineering 1989, Transportation Research Board, National Research Council, pp. 160-168.

Evans, J. C. and Fang, H. Y., "Triaxial Permeability and Strength Testing of Contaminated Soils," *Advanced Triaxial Testing of Soil and Rock*, ASTM STP 977, ASTM STP 977, American Society for Testing and Materials, Philadelphia, 1988. pp. 387-404.

Fang, H. Y. and Evans, J. C., "Long Term Permeability Tests Using Leachate on a Compacted Clayey Liner Material," *Ground Water Contamination: Field Methods*, ASTM STP 963, A. G. Collins and A. J. Johnson, Eds., American Society for Testing and Materials, Philadelphia, 1988. pp. 397-404.

Evans, J. C., Stahl, E. D. and Droof, E., "Plastic Concrete Cutoff Walls," *Geotechnical Practice for Waste Disposal '87*, ASCE Geotechnical Special Publication No. 13, June, 1987, pp. 462-472.

Alther, G. R., Evans, J. C., Fang, H. Y. and Witmer, K. A., "Inorganic Permeant Effects Upon Bentonite," *Hydraulic Barriers in Soil and Rock*, ASTM STP 874, 1984, pp. 64-74.

Evans, J. C. and Fang, H. Y., "Triaxial Equipment for Permeability Testing with Hazardous and Toxic Permeants," *Geotechnical Testing Journal*, ASTM, Volume 9, Number 3, Sept., 1983, pp. 126-132.

Kovacs, W. D., Griffith, A. H., and Evans, J. C., "An Alternative to the Cathead and Rope for the Standard Penetration Test," *Geotechnical Testing Journal*, ASTM, Volume 1, Number 2, June, 1978, pp. 71- 89.

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Books and Book Chapters

LaGrega M. L., Buckingham, P. L., and Evans, J.C., Hazardous Waste Management, 2nd Ed., McGraw-Hill Book Company, New York, NY, 2001, Reissued 2010 by Waveland Press, Inc.

Evans, J. C., "Soil- and Cement-Based Vertical Barriers with focus on Materials," Chapter 2 in Assessment of Barrier Containment Technologies, Rumer, R. R. and Mitchell, J. K. (Eds.), 1996, NTIS#PB96-180583.

Bodosci, A., Daniel, D. E. Evans, J. C. and Mitchell, J. K. (principal contributors), Rumer, R. R. and Ryan, M. E. (eds.), Barrier Containment Technologies for Environmental Remediation Applications, John Wiley and Sons, Inc., 1995.

LaGrega M. L., Buckingham, P. L., and Evans, J.C., Hazardous Waste Management, McGraw-Hill Book Company, New York, NY, 1994.

Fang, H. Y. and Evans, J. C., "Techniques for Controlling Solid and Liquid Wastes", Process Engineering for Pollution Control and Waste Minimization, Ed. D. L. Wise, Marcel Dekker, Inc., 1993.

Evans, J. C., "Vertical Cutoff Walls," Chapter 17 in Geotechnical Practice for Waste Disposal, Ed. D. E. Daniel, Chapman and Hall, 1993.

Evans, J. C., "Geotechnics of Hazardous Waste Control Systems," Chapter 20 in Foundation Engineering Handbook, 2nd ed., Ed. H. Y. Fang, Von Nostrand Reinhold Company, New York, NY, 1991.

Evans, J. C., Fang, H. Y., and Kugelman, I. J., "Influence of Hazardous and Toxic Wastes on the Engineering Behavior of Soils," Chapter 21 in Management of Toxic and Hazardous Wastes, edited by Bhatt, H. G., Sykes, R. M., and Sweeney, T. L., 1985, Lewis Publishers, Inc., Chelsea, MI, pp. 237-264.

Fang, H. Y., Evans, J. C., and Kugelman, I. J., "Solid and Liquid Waste Control Techniques," Chapter 11 in Solid and Liquid Wastes: Management Methods, and Socioeconomic-Considerations, edited by Majum dar, S. K. and Miller, E. W., 1984, Pennsylvania Academy of Science, Easton, PA, pp. 104-118.

Conference Proceedings

Ruffing, D. G., and Evans, J. C., "In Situ Evaluation of a Shallow Soil Bentonite Slurry Trench Cutoff Wall" *Proceedings of the 6th International Congress on Environmental Geotechnics*, New Delhi, India, November 8-12, 2010, Tata McGraw-Hill ISBN 13:9780070707108, pp. 758-763.

Garbin, E. J., Evans, J. C., and Hussin, J. D. "Trench Cutting Remixing Deep (TRD) Method for Vertically Mixed In-Place Cutoff Wall Construction at the Herbert Hoover Dike," *Proceedings of Dam Safety 2009*, Hollywood, Florida, September 27-October 1, 2009.

Evans, J. C. "Alamitos Gap: A Case Study using the Trench Remixing and Deep Wall (TRD) Method" *Proceedings: Sixth International Conference on Case Histories in Geotechnical Engineering*, Arlington, VA August 11 -16, 2008.

McGinnis, Richard G. and Evans, Jeffrey C., "Preparing Engineering Faculty to Lead International Short-term Programs to Ensure Quality Education," to be presented at the 6th Annual ASEE Global Colloquium on Engineering Education, *"Shaping the Future through Global Partnerships,"* Istanbul, Turkey, October 1 - 4, 2007.

Evans, J. C., Shackelford, C. D., Yeo, S.-S., and Henning, J. T., "Membrane Behavior of Soil-Bentonite Slurry Trench Cutoff Walls," *Proceedings of the International Conference on Energy, Environment and Disasters (INCEED 2005)*, Charlotte, NC, USA, July 24-30, 2005.

Evans, J. C., Trast, J. M. and Frank, R. L., "Lessons Learned from the Macon County Slurry Wall," *Proceedings: Fifth International Conference on Case Histories in Geotechnical Engineering*, NY, NY April 13-17, 2004.

Evans, J. C. "Slurry walls for the rehabilitation of land disposal sites," *Proceedings of Waste Management and the Environment*, Cadiz, Spain, September, 2002.

Evans, J. C., Dawson, A. R. and Opdyke, S. M. "Slurry Walls for Groundwater Control: A Comparison of UK and US Practice," *Proceedings of the 19th Central Pennsylvania Geotechnical Seminar: Current Trends in Geotechnical Engineering*, Hershey, PA, May, 2002.

Evans, J. C. and Opdyke, S. M., Hydraulic Conductivity of Cement-Bentonite-Slag Slurry Wall Mixtures, *Proceedings of the 2001 International Containment and Remediation Technology Conference and Exhibition*, Orlando, FL June 10-13, 2001 (extended abstract).

Evans, J. C., and Prince, M. J., "Low Permeability Vertical Barriers for Combined Isolation and Treatment," *Proceedings of the Fourth International Conference on Environmental Geotechnology*, Boston, MA, August, 1998.

Prince, M. J. and Evans, J. C., "Adsorptive Additives to Improve the Performance of Slurry Trench Cut-off Walls," *Toxic and Hazardous Wastes: Proceedings of the Thirtieth Mid-Atlantic Industrial Waste Conference*, Villanova University, Technomic Publishing Co., Lancaster, PA, July, 1998, pp. 712-721.

Evans, J. C., Adams, T. L., and Dudiak, K. A., "Enhanced Slurry Walls as Treatment Zones for Inorganic Contaminants," *Toxic and Hazardous Wastes: Proceedings of the Twenty Seventh Mid-Atlantic Industrial Waste Conference*, Lehigh University, Technomic Publishing Co., Lancaster, PA, July, 1995, pp. 712-721.

Evans, J. C., Prince, M., Bernardo, M. and Faulkner, M., "Biologically Active Slurry Trench Cutoff Walls," *Toxic and Hazardous Wastes: Proceedings of the Twenty Sixth Mid-Atlantic Industrial Waste Conference*, University of Delaware, Technomic Publishing Co., Lancaster, PA, August, 1994.

Evans, J. C. and Cooley, B. H. "Slurry Wall Performance," *Proceedings of the 13th Central Pennsylvania Geotechnical Seminar*, Hershey, PA, April, 1993.

Zarlinski, S. J. and Evans, J. C., "Weathering Resistance of Stabilized Petroleum Sludges," *Proceedings of the 11th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1990, p. 712-715.

Zarlinski, S. J. and Evans, J. C., "Durability Testing of a Stabilized Petroleum Sludge" *Toxic and Hazardous Wastes: Proceedings of the Twenty-Second Mid-Atlantic Industrial Waste Conference*, Technomic Publishing Co., Drexel University, July, 1990, pp. 542-556.

Evans, J. C. and Pancoski, S. E., "Stabilization of Petroleum Sludges," *Proceedings of the 10th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1989, p. 292-297.

Alther, G. R., Evans, J. C., Zarlinski, S., "A Composite Liner to Retain Inorganic and Organic Contaminants" *Proceedings of the 10th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1989, p. 543- 546.

Evans, J. C., LaGrega, M. D., Pancoski, S. E. and Raymond, A., "Methodology for the Laboratory Investigation of Stabilization/Solidification of Petroleum Sludges," *Proceedings of the 9th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1988, pp. 403-408.

Alther, G. R., Evans, J. C. and Pancoski, S. E., "Organically Modified Clays for Stabilization of Organic Hazardous Wastes" *Proceedings of the 9th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1988, pp. 440-445.

Pancoski, S. E., Evans, J. C., LaGrega, M. L. and Raymond, A., "Stabilization of Petrochemical Sludges: A Review of the Literature," *Toxic and Hazardous Wastes: Proceedings of the Twentieth Mid-Atlantic Industrial Waste Conference*, Howard University, Technomic Publishing Co., June, 1988, pp. 299-316.

Alther, G. R., Evans, J. C., and Andrews, E., "Organic Fluid Effects Upon Bentonite" *Proceedings of the 5th National Conference on Hazardous Wastes and Hazardous Materials*, Las Vegas, Nevada, April, 1988, pp. 210-214.

Evans, J. C., Stahl, E. D. and Droof, E., "Plastic Concrete Slurry Trench Cutoff Walls," *Proceedings of the Second International Conference on New Frontiers for Hazardous Waste Management*, Pittsburgh, PA, September, 1987, pp. 185-192.

LaGrega, M. L. and Evans, J. C., "Overview of Existing Technologies for Hazardous Waste Site Clean-up," *Proceedings of the 1st International Conference on Environmental Geotechnology*, Vol. II, Envo Publishing Company, Bethlehem PA, 1987, pp. 30-46.

Evans, J. C. and LaGrega, M. L., "Remediation of Superfund Sites: Any Feasible Solutions?," *Toxic and Hazardous Wastes: Proceedings of the Nineteenth Mid-Atlantic Industrial Waste Conference*, Bucknell University, June, 1987, pp. 310-329.

Evans, J. C. and Fang, H. Y., "Slurry Trench Cutoff Walls for Waste Containment," *Proceedings of the 1st International Conference on Environmental Geotechnology*, Allentown, PA, April, 1986, pp. 303-311.

Evans, J. C. and Manuel, E. N., "Geotechnical Property Testing of Hazardous Materials and Contaminated Soils," *Proceedings of the 6th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1985, pp. 369-373.

Evans, J. C., Lennon, G. P., and Witmer, K. A., "Analysis of Soil-Bentonite Backfill Placement in Slurry Walls," *Proceedings of the 6th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1985, pp. 357-361.

Evans, J. C., Fang, H. Y., and Kugelman, I. J., "Containment of Hazardous Materials with Soil-Bentonite Slurry Walls," *Proceedings of the 6th National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1985, pp. 249-252.

Rumbaugh, D. B., Evans, J. C., and Lennon, G. P., "Applicability of Groundwater Models to Microcomputers," *Proceedings of the ASCE Hydrology Division Specialty Conference*, Lake Buena Vista, FL, August, 1985, pp. 1231-1236.

Evans, J. C., Kugelman, I. J., and Fang, H. Y., "Organic Fluid Effects on the Strength, Deformation, and Permeability of Soil-Bentonite Slurry Walls," *Proceedings of the Seventeenth Mid-Atlantic Industrial Waste Conference*, Lehigh University, Technomic Publishing Co., Bethlehem, PA, June, 1985, pp. 275-291.

Waller, F. S. and Evans, J. C., "Geotechnics of Lagoon Closures," *Proceedings of the Third Annual Hazardous Materials Management Conference*, Philadelphia, PA, June, 1985.

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Evans, J. C., "Embankment Construction Utilizing Flyash," *Proceedings of the International Symposium on Low-Cost and Energy Saving Construction Materials*, Volume 1, Rio de Janeiro, Brazil, June, 1984, pp. 339-355.

Fang, H. Y., Evans, J. C., and Kugelman, I. J., "Effect of Pore Fluid on Soil Cracking Mechanisms," *Proceedings of the 5th Engineering Mechanics Division Specialty Conference*, ASCE, Laramie, WY, August, 1984.

Evans, J. C., Kugelman, I. J., and Fang, H. Y., "Influence of Industrial Wastes on the Geotechnical Properties of Soils," *Proceedings of the Fifteenth Mid-Atlantic Industrial Waste Conference, Bucknell University*, Technomic Publishing Co., Lewisburg, PA, June, 1983, pp. 557-568.

Evans, J. C., and Fang, H. Y., "Geotechnical Aspects of the Design and Construction of Waste Containment Systems," *Proceedings of the 3rd National Conference on the Management of Uncontrolled Hazardous Waste Sites*, Washington, D. C., November, 1982, pp. 175-182.

Kovacs, W. D., Evans, J. C., and Griffith, A. H., "Towards a More Standardized SPT," *Proceedings of the Ninth International Conference on Soil Mechanics and Foundation Engineering*, Tokyo, Japan, 1977, Volume 2, pp. 269-276.

Discussions

Manuel, E. M., Evans, J. C., and Singh, R. D., Discussion of "Hydraulic Conductivity of Two Prototype Clay Liners," by S. R. Day and D. E. Daniel, *Journal of the Geotechnical Engineering Division*, ASCE, Volume 113, No. GT7, July, 1987, pp. 804-806.

Evans, J. C., Dvinoff, A. H., and Marano, P. M., Discussion of "Construction Vibrations: State-of-the-Art" by J. F. Wiss, *Journal of the Geotechnical Engineering Division*, ASCE, Volume 108, No. GT3, March, 1982 pp. 510-512.

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Proceedings Edited

Burns, S. E., Culligan, P.J, Evans, J. C. Fox, P. J., Reddy, K. R. and Yesiller, N., eds. *Geo-Denver 2007: New Peaks in Geotechnics, ASCE Geotechnical Special Publication GSP-163 Geoenvironmental Engineering,*, February, 2007

Evans, J. C., ed., *In Situ Remediation of the Geoenvironment, Proceedings of the Conference*, ASCE Geotechnical Special Publication No. 71, February, 1997.

Evans, J. C., ed., *Toxic and Hazardous Wastes: Proceedings of the Nineteenth Mid-Atlantic Industrial Waste Conf.*, Bucknell University, June, 1987, Technomic Pub. Co., Lancaster. Pa., 712 pp.

Funded Proposals (last five years)

NSF NEES Award: *Experimental and Numerical Investigation of Sedimentation and Post-Liquefaction Shear Strength of Cohesionless Soils*, Collaborative Project with Ronaldo Borja, Stanford University and Edward Kavazanjian, Arizona State University (2009)

NSF Award: Major Research Instrumentation, *Acquisition of Drilling Rig and Accessories for In Situ Investigations of Slurry Trench Cutoff Walls*, Jeffrey C. Evans and Michael A. Malusis, Bucknell University, Lewisburg, PA (2007)

NSF Award: *Collaborative Research;* H*ydraulic Sustainability of Soil-Bentonite Cutoff Walls Subjected to Cyclic Wetting and Drying*, Michael A. Malusis and Jeffrey C. Evans, Bucknell University, Lewisburg, PA, Radhey S. Sharma, Louisiana State University, Baton Rouge, LA (2007)

NSF Award: *Collaborative Research, Enhanced Clay Membrane Barriers for Sustainable Waste Containment*, Michael A. Malusis and Jeffrey C. Evans, Bucknell University, Lewisburg, PA, Charles D. Shackelford, Colorado State University, Fort Collins, CO (2006)

Engineering Reports

As a consultant, over 100 technical reports have been authored and co-authored in the last thirty-five years.

JEFFREY C. EVANS

Highlight of Slurry Trench Cutoff Wall Experience

Dr. Evans experience with slurry trench cutoff walls dates to 1977 beginning with a feasibility study of a soil-bentonite slurry trench cutoff wall for ground water control in a 76-foot deep excavation. Although the client opted for conventional deep well dewatering on this project, the disappointing performance of the dewatering system led to selection of a soil-bentonite slurry trench cutoff wall for another deep excavation on the same site the following year. Dr. Evans design and construction experience continued as he served as Project Engineer/Project Manager with Woodward-Clyde Consultants (now URS)for a soil-bentonite cutoff wall in Michigan, a cement-bentonite/sheet pile composite cutoff wall at a nuclear power plant in Ohio, a soil-bentonite slurry trench cutoff wall around a solid waste landfill in Maryland, a combination soil-bentonite and cement-bentonite slurry trench cutoff wall surrounding the site of a train wreck and chemical spill in Louisiana and a soil-bentonite cutoff wall for ground water control and secondary leachate control around a solid waste landfill in Virginia.

Dr. Evans slurry wall experience goes beyond applications as he has been conducting research into the performance of slurry walls for the last twenty-five years. His Ph.D. dissertation involved the study of the soil-pore fluid interactions for soil-bentonite materials used in a contaminated environment. He has also conducted research in the mechanics of backfill movement as it is placed in the trench and the performance of plastic concrete backfill. His recent research revolves around 1) measurements of the permeability and state of stress in slurry trench cutoff walls and includes in situ testing, laboratory testing and finite element analysis; and 2) enhanced slurry walls to transform them from merely passive barriers into active treatment zones, 3) state-of-stress and shear strength of a soil-bentonite cutoff walls where field load cells and settlement plates were installed and in-situ strength tests conducted over time and 4) performance of slag-CB mixtures as used in both one-pass construction methods and in-situ mixed methods.

As shown on his resume, Dr. Evans is now Chair and Professor of the Department of Civil and Environmental Engineering at Bucknell University where he remains active in slurry wall research and consulting. He served as a principal consultant for a DuPont sponsored barrier research program undertaken at the New York State Center for Hazardous Waste Management located at the State University of New York at Buffalo. His consulting assignments have included a soil-bentonite slurry trench cutoff wall for a sites in Wisconsin, Michigan and Quebec, Canada, a soil-bentonite cutoff wall for the McColl Superfund site in southern California, a deep slurry trench cutoff wall which included a deep soil mixing phase for a Superfund site in southern Ohio, a slurry trench cutoff for a combined ground water control and structural soil retention system in Virginia, a slurry trench cutoff wall for a Superfund site in Delaware, and the first ever project involving the Japanese TRD method at Alamitos Gap in southern California. He recently consulted for slag-CB shear walls for seismic stabilization of a Corps of Engineers dam in Kansas and cutoff wall for a contaminated environment in Utah. He is currently consulting on the TRD cutoff wall at the Herbert Hoover Dike in Florida.