

The 18th Annual International Conference on

**Contaminated
Soils,
Sediments
and Water**

October 21-24, 2002
University of Massachusetts at Amherst



Conference Co-Directors
Paul T. Kostecki, Ph.D.
Edward J. Calabrese, Ph.D.
Environmental Health Sciences
School of Public Health
University of Massachusetts
Amherst, MA

Clifford Bruell, Ph.D.
Center for Environmental Engineering
Science & Technology
University of Massachusetts
Lowell, MA

Brian J. Rothschild, Ph.D.
Graduate School of
Marine Sciences & Technology
University of Massachusetts
Dartmouth, MA

Analysis, Site Assessment, Fate,
Environmental and Human Risk Assessment,
Remediation and Regulation

- **125 Presenters**
- **97 Posters**
- **10 Workshops**
- **44 Exhibitors**

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WORKSHOPS

- 10:00 am - 5:00 pm 1) **The Indoor Air Exposure Pathway from Chlorinated Solvent Contaminated Groundwater** (*Campus Center Auditorium*)
- 10:00 am - 5:00 pm 2) **Theory and Use of Field Portable X-ray Fluorescence for Soil Analysis** (*917 Campus Center*)
- 10:00 am - 5:00 pm 3) **In-Situ Chemical Oxidation Workshop** (*168C Campus Center*)
- 1:00 - 5:00 pm 4) **Workshop on Current Spectrochemical Techniques for Determining Heavy Metals in Sediments and Soils** (*904-08 Campus Center*)
- 1:00 - 5:00 pm 5) **Practical Remediation of Volatile Organic Compounds in Soil and Groundwater** (*101 Campus Center*)

AM SESSIONS

1: ADVANCES IN IN-SITU REMEDIATION

Campus Center Auditorium
Sponsored by ENVIRONMENTAL BUSINESS SOLUTIONS INTERNATIONAL, INC.
Moderator: **Ronald J. Scudota**, SUNY at Oswego, NY

2: PHYTOREMEDIATION

Bowker Auditorium, Stockbridge Hall
Moderators: **Guy Lanza**, Ph.D. University of Massachusetts Amherst
Lee Newman, University of South Carolina Columbia

3: HEAVY METALS

101 Campus Center
Moderator: **Gina Calderone**, CPG, EA Engineering, Science, and Technology, Newburgh, NY

8:30 AM	Advances in Methods to Stage Injection and Determine Subsurface Coverage of Regenesis HCR and ORC and Other Materials Alan Livadas, <i>Vironex, Inc., Wilmington, DE</i>	A Dynamic Feedback Model of Plant-Soil Interactions Affecting Metal Accumulation Jennifer K. Saxe, <i>Gradient Corporation, Cambridge, MA</i> Christopher A. Impellitteri, <i>U.S. EPA National Risk Management Research Laboratory, Cincinnati, OH</i> Herbert E. Allen, <i>University of Delaware, Newark, DE</i>	Assessment of Methylmercury Risk to Three Species of Wading Birds in the Florida Everglades Darren G. Rumbold, <i>South Florida Water Management District, West Palm Beach, FL</i>
8:55 AM	Enhanced In-Situ Chemical Oxidation Using the PRP System Ronald J. Scudota, <i>SUNY at Oswego, Oswego, NY</i> Jeffrey R. Chiarenzelli, <i>SUNY at Potsdam, Potsdam, NY</i>	Phytoremediation of Persistent Organic Pollutants (POPs) in Soil Jason C. White, <i>The Connecticut Agricultural Experiment Station, New Haven, CT</i> Mary-Jane Incorvia, <i>The Connecticut Agricultural Experiment Station, New Haven, CT</i>	Contamination Issues and Soil Health in Urban Forestry Nicholas Dickinson, <i>Liverpool John Moores University, Liverpool, UK</i> Christopher French, <i>Liverpool John Moores University, Liverpool, UK</i> Philip Putwain, <i>University of Liverpool, Liverpool, UK</i>
9:20 AM	LNAPL In-Situ Remediation in Difficult Setting Rich Werner, <i>Environmental Consulting, Inc., Norristown, PA</i> Mark Vigneri, <i>EBSI, Wayne, NJ</i> Dr. Bill Mchaffey, <i>Pelorus Labs</i> Dr. Bill Slack, <i>FRX</i>	Laboratory Measurements of Storm-Water Quality Improvement in Detention Ponds-Phytoremediation Study Jeffrey Weiss, <i>University of Minnesota, Minneapolis, MN</i> Miki Hondzo, <i>University of Minnesota, Minneapolis, MN</i> John Gulliver, <i>University of Minnesota, Minneapolis, MN</i> Michael Semmens, <i>University of Minnesota, Minneapolis, MN</i> David Biesboer, <i>University of Minnesota, St Paul, MN</i>	Spatial Distribution of Total and Methyl Mercury in Stream Sediments at Superfund Site Dorothea Seth Richardson, <i>CDM, South Plainfield, NJ</i> Joseph J. Mayo, <i>CDM, South Plainfield, NJ</i> Demetrios Klerides, <i>CDM, New York, NY</i> Thomas Taccone, <i>U.S. Environmental Protection Agency, Region 2, New York, NY</i>
9:45 AM	Questions	Questions	Questions
10:00 AM	Break	Break	Break
10:30 AM	In-Situ Soil and Groundwater Remediation of CVOCs in Clay and Saprolite Janet Strike, P.E., <i>Malcolm Pirnie, Inc., Wilmington, DE</i> Matthew P. Lesley, P.G., <i>Malcolm Pirnie, Inc., Wilmington, DE</i> Daniel P. Sheehan, P.E., <i>Malcolm Pirnie, Inc., Wilmington, DE</i>	Global Enzymatic Activities - Potential Tools in Assessment of Phytostabilization Strategies Ioana G. Petrisor, <i>University of Southern California, Los Angeles, CA</i> J. Michael Kuperberg, <i>Florida State University, Tallahassee, FL</i> Ioan I. Lazar, <i>Institute of Biology of Romanian Academy, Bucharest, Romania</i>	Effects of High pH on Metals Mobility in Groundwater Purshotam K. Juriasingani, <i>Tetra Tech NUS, Inc., Oak Ridge, TN</i> Richard W. Arnseth, <i>Tetra Tech NUS, Inc., Oak Ridge, TN</i> Michael Albert, <i>Tetra Tech NUS, Inc., Oak Ridge, TN</i> Terry Hansen, <i>Tetra Tech NUS, Inc., Tallahassee, FL</i> Adrienne Wilson, <i>Southern Division Naval Facilities Engineering Command, North Charleston, SC</i>
10:55 AM	Minimizing Injection Points for Dry Cleaner Remediation Jeff W. Brudereck, <i>Whitman Companies, Inc., East Brunswick, NJ</i> Richard Britton, <i>Whitman Companies, Inc., East Brunswick, NJ</i> Todd Gerber, <i>Whitman Companies, Inc., East Brunswick, NJ</i> Chris Blake, <i>Whitman Companies, Inc., East Brunswick, NJ</i>	Effects of Burrowing Earthworms on Phytoremediation of Pb/Zn Mine Tailings Ma Ying, <i>Hong Kong Baptist University, Hong Kong SAR, PR China</i> Ming H. Wong, <i>Hong Kong Baptist University, Hong Kong SAR, PR China</i> Nicholas M. Dickinson, <i>Liverpool John Moores University, Liverpool, UK</i>	Review of In-Situ Remediation Technologies for Lead, Zinc, and Cadmium in Soils Todd Martin, <i>Integral Consulting, Inc., Boulder, CO</i> Mike Ruby, <i>Exponent, Boulder, CO</i> Andrew Green, <i>International Lead and Zinc Research Organization, Durham, NC</i>
11:20 AM	In-Situ Co-Precipitation of Metals John S. Haselow, PhD, P.E., <i>Redox Tech, LLC, Aiken, SC</i> Bernd W. Rehm, P.G., C.P.G., <i>RMT, Inc., Madison, WI</i> Jim F. Crowley, P.E., <i>RMT, Inc., Madison, WI</i>	Metallophytes: A Unique Biodiversity Resource 'Owned' by the Minerals Industry Alan J M Baker, <i>The University of Melbourne, Australia</i> Steven N Whiting, <i>The University of Melbourne, Australia</i> David Richards, <i>The University of Melbourne, Australia</i>	In-Place Closure of Industrial Waste Impoundments: A Case History Linda M. Burke, <i>NTH Consultants, Ltd., Farmington Hills, MI</i> John S. Browning III, <i>The Mannik & Smith Group, Inc., Dearborn, MI</i> Pamela M. Dotz, <i>Ford Motor Land Services Corporation, Dearborn, MI</i> Clifford V. Fleener, <i>Visteon Corporation, Monroe, MI</i> David S. Miller, <i>Ford Motor Land Services Corporation, Dearborn, MI</i>
11:45 AM	Questions	Questions	Questions
Noon	Lunch	Lunch	Lunch

Luncheon Speaker, Tuesday, October 22, 2002

California MTBE Litigation - The South Lake Tahoe Case Revisited

Jim Derouin, *esq., partner*

Steptoe & Johnson, LLP, Phoenix, AZ

1: MTBE

Campus Center Auditorium
Sponsored by LYONDELL
Moderator: **Ellen Moyer, Ph.D.**,
Tighe & Bond, Inc., Westfield, MA

2: SEDIMENTS I

Bowker Auditorium, Stockbridge Hall
Moderator: **Henry Tabak**,
US EPA, ORD, Cincinnati, OH

3A: RBCA

101 Campus Center
Moderator: **Millie Garcia-Surette**,
MA DEP, Lakeville, MA

1:30 PM *In-situ Remediation of MTBE and other Petroleum Hydrocarbons by Iso-Gen™ Technology*
John Lambie *Environmental H2O, Milwaukie, OR*
L. Donald Ochs, *Environmental H2O, Cinnaminson, NJ*

Microbial Characterization of Contaminated Sediments Using Dual Stain Flow Cytometry
Cyndee Gruden, *University of Michigan, Ann Arbor, MI*
Anna Khijniak, *University of Michigan, Ann Arbor, MI*
Peter Adriaens, *University of Michigan, Ann Arbor, MI*

Summary of Toxicological Benchmarks and Soil Remediation Goals to be Protective of Environment
Chunhua Liu, Ph.D., *Parsons, Canton, MA*
Dave Babcock, M.S., *Parsons, Liverpool, NY*
Jacqueline Travers, M.S., *Parsons, Canton, MA*
Todd Heino, B.S., *Parsons, Canton, MA*

1:55 PM **MTBE, TBA, and TAME Removal with Microbubble Ozone Injection**
William B. Kerfoot, *K-V Associates, Inc., Mashpee, MA*
Paul LeCheminant, *Gettler-Ryan, Inc., Dublin, CA*

Enhanced Solid-Phase Bioremediation of PAH-Impacted Dredged Marine Sediments from the Tar Site in Sidney, Nova Scotia, Canada
Alan G. Seech, *Grace Bioremediation Technologies, Mississauga, Ontario, Canada*
Geoffrey Bell, M.Sc., *Grace Bioremediation Technologies, Mississauga, Ontario, Canada*
James Mueller, Ph.D., *URS/Dames & Moore, Rolling Meadows, IL*

Assessment of, and Risk Based Cleanup Approach for a Large Volume Jet Fuel Spill
Kiran K. Srinivasan, *ENTRIX, Inc., Houston, Texas*
Christina Robinson, *ENTRIX, Inc., Houston, Texas*

2:20 PM **Effectiveness of Air Sparging and Soil Vapor Extraction for Methyl-Tert-Butyl Ether (MTBE) Removal**
Travis K.J. Williamson, *Battelle Memorial Institute, Columbus, OH*
James T. Gibbs, *Battelle Memorial Institute, Columbus, OH*
Julie M. Kramer, *Battelle Memorial Institute, Columbus, OH*
Thomas L. Macchiarella, *Southwest Division, Naval Facilities Engineering Command, San Diego, CA*

The Effect of Plants on the Dynamics of Heavy Metals in Wetland Sediments
Shanping Xu, *Princeton University, Princeton, NJ*
Peter Jaffe, *Princeton University, Princeton, NJ*

Undertaking Risk-Based Remediations in Brazil
Manu Sharma, *Gradient Corporation, Cambridge, MA*
Richard J. Blanchet, *Gradient Corporation, Cambridge, MA*

3B: REGULATORY

101 Campus Center
Moderator: **Millie Garcia-Surette**,
MA DEP, Lakeville, MA

2:45 PM **Is The Transect Method For Determining the Mass Flux of a Contaminant “Junk Science?”**
James G. Derouin, *Steptoe & Johnson, LLP, Pheonix, AZ*
Murray Einarson, *Einarson and Associates, Palo Alto, CA*

Results of Interspecies Toxicity Comparison Testing Associated with Contaminated Sediment Management
Meg R. Pinza, *Battelle Marine Sciences Laboratory, Sequim, WA*
Jeffrey A. Ward, *Battelle Marine Sciences Laboratory, Sequim, WA*
Nancy P. Kohn, *Battelle Marine Sciences Laboratory, Sequim, WA*

Developing Soil Re-use Criteria in California for the Alameda Corridor Project
Carl Peter Ripaldi, *URS Corporation, Los Angeles, CA*

3:10 PM **Questions**

Questions

Questions

3:20 PM **Break**

Break

Break

3:50 PM **Removal of Methyl-t-Butylether from Water Using Synthetic Adsorbents**
W. H. Brendley, *Philadelphia University, Philadelphia, PA*
C. B. Hartz, *Philadelphia University, Philadelphia, PA*
H. C. Hamann, *Philadelphia University, Philadelphia, PA*

Biological Effects Associated with Sediment Contamination in San Francisco Bay
Dr. S. Ian Hartwell, *NOAA/NOS, Silver Spring, MD*
Dr. M. Jawed Hameedi, *NOAA/NOS, Silver Spring, MD*

Asbestos in Soil: An Owner's Perspective
John M. O'Donnell, P.E., *Division of Capital Asset Management, Boston, MA*
Mark Roberts, P.E., *Division of Capital Asset Management, Boston, MA*

4:15 PM **Phytoremediation of MTBE with *Ceratopteris richardii***
Bryan W. Brendley, *Gannon University, Philadelphia, PA*
William H. Brendley, Jr., *Philadelphia University, Philadelphia, PA*
Herman Harmann, Ph.D., *Philadelphia University, Philadelphia, PA*

Sediment MTBE Interactions at a Full Scale Site in Montana: Natural Attenuation and Toxicity
Ronald C. Sims, *Utah State University, Logan, UT*
Aaron Swank, *Utah State University, Logan, UT*

Immediate Response Actions to Address Impacts to Residential Receptors
Janine Commerford, *Massachusetts Department of Environmental Protection, Boston, MA*
Millie Garcia-Surette, *Massachusetts Department of Environmental Protection, Lakeville, MA*
Laurel MacKay, *Massachusetts Department of Environmental Protection, Willmington, MA*
Paul Locke, *Massachusetts Department of Environmental Protection, Boston, MA*
Gerard Martin, *Massachusetts Department of Environmental Protection, Lakeville, MA*

4:40 PM **Strategic Pumping to Divert MTBE and BTEX Plume From Municipal Water Supply Wells**
Evan T. Johnson P. E., *LSP, Tighe & Bond, Westfield, MA*

Potential for Dehalogenation of Dioxin in Marine and Estuarine Sediments
Donna E. Fennell, *Rutgers University, New Brunswick, NJ*
Young-Beom Ahn, *Rutgers University, New Brunswick, NJ*
Lee J. Kerkhof, *Rutgers University, New Brunswick, NJ*
Max M. Häggblom, *Rutgers University, New Brunswick, NJ*

Army and Commonwealth of Massachusetts: Partnership for Compatible Training and Sustainable Environmental Protection in Cape Cod, Massachusetts
LTC Brian D. Rogers, *Department of the Army, Washington, D.C.*
COL Joseph Matera, *Army National Guard Environmental Readiness Center, Camp Edwards, MA*
CPT Anthony Sciaraffa, *Massachusetts National Guard, Milford, MA*
LTC Timothy A. Mullen, *Massachusetts Air National Guard Headquarters, Otis ANGB, MA*

5:05 PM **Full-Scale MTBE Biobarrier - Presentation of Final Results form a 3-year ESTCP Demonstration at Port Hueneme, CA**
Karen Miller, *Naval Facilities Engineering Service Center, Port Hueneme, CA*
Paul C. Johnson, *Arizona State University*
Cristin L. Bruce, *Arizona State University*

Questions

Emerging Water Contaminants: Technical, Legal and Policy Challenges
Rula A. Deeb, Ph.D., *Malcolm Pirnie, Inc., Emeryville, CA*
Michael C. Kavanaugh, Ph.D., P.E., *Malcolm Pirnie, Inc., Emeryville, CA*

5:30 PM **Questions**

End

Questions

5:40 PM **End**

End

1: ENVIRONMENTAL FORENSICS I

Campus Center Auditorium

Moderator: **Monica N. Danon-Schaffer**,
NovaTec Consultants Inc.,
Vancouver, BC

2: MGP SITE CLOSURE

101 Campus Center

Sponsored by **ENSR INTERNATIONAL**
Moderators: **Chris Mitchell**,
ENSR International, Westford, MA
Joe Campisi,
ENSR International, E. Syracuse, NY

3: BIOREMEDIATION

168C Campus Center

Moderator: **Peter Guest**,
Parsons, Denver, CO

8:30 AM	<p>The Types and Weathering States of PCB Mixtures in New Bedford Harbor Sediments Revealed by Environmental Forensic Methodology Stephen Emsbo-Mattingly, <i>Battelle Memorial Institute, Duxbury, MA</i> Helen Douglas, <i>Foster Wheeler Environmental Corporation, Boston, MA</i></p>	<p>The EPRI Nationwide Background PAH Program Results Just the Beginning Andrew Jay Coleman, Ph.D., <i>Electric Power Research Institute, Palo Alto, CA</i> David Mauro, <i>Meta Environmental, Inc., Watertown, MA</i></p>	<p>Effect of Triethyl Phosphate on the Biodegradation of Diesel Fuel Gary L. Mills, <i>University of Georgia, Aiken, SC</i> Patterson Nuessle, <i>University of Georgia, Aiken, SC</i> Heather L. Lott, <i>Texas A&M University, College Station, TX</i> Bruce E. Herbert, <i>Texas A&M University, College Station, TX</i></p>
8:55 AM	<p>VOCs Measured in Sodium Bisulfate and Methanol Preserved Samples (Method 5035) and Risk Characterization Impacts Patrick P. King, <i>GEI Consultants, Inc., Winchester, MA</i> Michael D. Walters, <i>Polaroid Corporation, Waltham, MA</i></p>	<p>MGP Sediment Management Concerns and Approaches - Observations/Considerations Raymond D. D'Hollander, PE, <i>ENSR International, Syracuse, NY</i></p>	<p>Degradation of 1,1,1-trichloroethane in Groundwater by Indigenous Microorganisms under Anaerobic Conditions Paula R. Chang, <i>GeoSyntec Consultants, Boxborough, MA</i> Elizabeth Edwards, Ph.D., P.E., <i>University of Toronto, Toronto, Ontario, Canada</i> Sandra Dworatzek, <i>University of Toronto, Toronto, Ontario, Canada</i> David Major, <i>GeoSyntec International, Inc., Guelph, Ontario, Canada</i> Peter Zeeb, <i>GeoSyntec Consultants, Boxborough, MA</i></p>
9:20 AM	<p>Evaluation of Light Non-aqueous Phase Liquid Weathering Rates at Various Fuel Release Sites Daniel R. Griffiths, <i>Parsons, Denver, CO</i> Bruce M. Henry, <i>Parsons, Denver, CO</i> Douglas C. Downey, <i>Parsons, Denver, CO</i> Jerry E. Hansen, <i>AFCEE/ERT, Brooks AFB, TX</i></p>	<p>Designing and Implementing Perimeter Air Monitoring Programs for MGP Site Remediations Leo Gendron, <i>ENSR International, Westford, MA</i> Anthony Sacco, <i>ENSR International, Westford, MA</i> Ishrat Chaudhuri, <i>ENSR International, Westford, MA</i></p>	<p>Enhanced Bioremediation of DNAPL in Clay Formation Willard Murray, <i>Harding ESE, Wakefield, MA</i> Diana Tremaine, <i>Harding ESE, Wakefield, MA</i> Maureen Dooley, <i>Regenesis, San Clemente, CA</i></p>
9:45 AM	<p>Questions</p>	<p>Questions</p>	<p>Questions</p>
10:00 AM	<p>Break</p>	<p>Break</p>	<p>Break</p>
10:30 AM	<p>Chemical Fingerprinting of Weathered Middle Distillate Fuels Using Bicyclic Sesquiterpanes Scott A. Stout, Ph.D., <i>BATTELLE, Duxbury, MA</i> Kevin J. McCarthy, <i>BATTELLE, Duxbury, MA</i> Allen D. Uhler, Ph.D., <i>BATTELLE, Duxbury, MA</i></p>	<p>Risk Based Action Levels for Perimeter Monitoring Programs at MGP Sites Lisa J.N. Bradley, PhD, <i>DABT, ENSR International, Westford, MA</i> Kelly Sullivan, <i>ENSR International, Westford, MA</i></p>	<p>Cost and Performance of Vegetable Oil Injection for Enhanced In Situ Bioremediation at Two Air Force Sites Bruce M. Henry, <i>Parsons, Denver, CO</i> Daniel R. Griffiths, <i>Parsons, Denver, CO</i> Allison M. Love, <i>Parsons, Denver, CO</i> Peter Guest, <i>Parsons, Denver, CO</i> James R. Gonzales, <i>AFCEE/ERT, Brooks AFB, TX</i></p>
10:55 AM	<p>MTBE and its Degradation Products: Molecular Modeling Study Krishna L. Bhat, <i>Philadelphia University, Philadelphia, PA</i> Seth Hayik, <i>Philadelphia University, Philadelphia, PA</i> Charles W. Bock, <i>Philadelphia University, Philadelphia, PA</i> William H. Brendley, Jr., <i>Philadelphia University, Philadelphia, PA</i></p>	<p>Comparison of Regulatory and Enforcement Programs at MGP Sites, Northeastern United States Scott T. Saroff, CPG., <i>Earth Tech Inc., Syracuse, NY</i></p>	<p>A Bioremediation Case Study: Butane Biostimulation for the Remediation of Petroleum Contaminants James F. Begley, <i>Global BioSciences, Inc., North Attleboro, MA</i> Joseph Longo, <i>Horsley & Witten, Inc., Sandwich, MA</i> Felix A. Perriello, <i>Global BioSciences, Inc., North Attleboro, MA</i> George DiCesare, <i>Global BioSciences, Inc., North Attleboro, MA</i></p>
11:20 AM	<p>Environmental Fate and Transport Modeling of Explosives and Propellants in the Saturated Zone Christopher Abate, <i>AMEC Earth & Environmental, Westford, MA</i> Al Laase, <i>AMEC Earth & Environmental, Westford, MA</i> Jacob Zaidel, <i>AMEC Earth & Environmental, Westford, MA</i> Jay L. Clausen, <i>AMEC Earth & Environmental, Westford, MA</i> Dave Hill, <i>MAARNG, Camp Edwards, MA</i></p>	<p>New York State Strategy for MGP Site Investigation and Remediation Robert W. Schick, P.E., <i>NY DEC, Albany, NY</i></p>	<p>Facilitated Desorbition and Incomplete Dechlorination: Observations from 350 Applications of HRC Stephen S. Koenigsberg, <i>Regenesis Bioremediation Products, San Clemente, CA</i> Kevin Lapus, <i>Regenesis Bioremediation Products, San Clemente, CA</i> Gunisha Pasrich, <i>Regenesis Bioremediation Products, San Clemente, CA</i></p>
11:45 AM	<p>Questions</p>	<p>Questions</p>	<p>Questions</p>
Noon	<p>Lunch</p>	<p>Lunch</p>	<p>Lunch</p>

Luncheon Speaker, Wednesday, October 23, 2002
The Central Artery Tunnel Project: Balancing Urban Highway Construction with Environmental Protections
Paul Stakutis
Central Artery Tunnel Project, Boston, MA

1: SEDIMENTS II

Campus Center Auditorium
 Moderators: **Henry Tabak**,
 US EPA, ORD, Cincinnati, OH
Ash Jain, EPRI (Electric Power
 Research Institute), Bridgewater, NJ

2: REMEDIATION- SOILS

101 Campus Center
 Moderators: **Ed Bilek**,
 MeadWestvaco, South Lee, MA

3A: CHEMICAL OXIDATION

168C Campus Center
 Moderator: **Clifford Bruell, Ph.D.**,
 University of Massachusetts Lowell

1:30 PM Validation of a Feasibility Study Foot Print at a Sediment Site Using a Weight-of-Evidence (WOE) Approach
 D.G. Gunster, *Battelle, Duxbury, MA*
 Dan Michael, *Neptune and Company, Los Alamos, NM*
 Jeff Ward, *Battelle Marine Science Laboratory, Sequim, WA*
 James Leather, *SPAWAR Systems Center, San Diego, CA*
 Michael Pound, *SOUTHWESTNAVFACENCOM, San Diego, CA*

Evaluation of the Dynamic Operation of a Large-scale Active Soil Gas and DNAPL Collection System
 Lucas A. Hellerich, *Metcalf and Eddy, Inc., Wallingford, CT*
 William A. Baker, *Metcalf and Eddy, Inc., Wallingford, CT*
 Jonathan P. Melone, *Metcalf and Eddy, Inc., Wallingford, CT*
 Ronald Curran, *State of Connecticut Department of Environmental Protection, Hartford, CT*

Chelated Native Iron in Fenton-Like Oxidation of BTEX and PAHs in Soils
 Andreas D. Jazdanian, *Burns & McDonnell Engineering Company, Oak Brook, IL*
 Krishna R. Reddy, *University of Illinois, Chicago, IL*

1:55 PM Monitored Biotransformation of RDX in a Saturated Soil: Alternative e⁻ Acceptors Alter Microbial Community Structure and Function
 David Ringelberg, *USACE-CRRELL, Hanover, NH*
 Mike Reynolds, *USACE-CRRELL, Hanover, NH*
 Karen Foley, *USACE-CRRELL, Hanover, NH*
 Lauren Raymond, *USACE-CRRELL, Hanover, NH*
 Larry Perry, *USACE-CRRELL, Hanover, NH*

In-situ Remediation of TCE in Clayey Soils Using the Lasagna Process
 Chris Athmer, *Terran Corporation, Beavercreek, OH*

Treatment of PCB Contaminated Sediment by Persulfate Oxidation with Pozzolanic Reaction
 Sharavan V. Govindan, *University of Connecticut, Storrs, CT*
 George E. Hoag, *University of Connecticut, Storrs, CT*
 Kun-Chang Huang, *University of Connecticut, Storrs, CT*

2:20 PM Metabolic Biomarkers for Detecting Anaerobic PAH Biodegradation in Groundwater and Sediments
 Craig D. Phelps, *Rutgers University, New Brunswick, NJ*
 L.Y. Young, *Rutgers University, New Brunswick, NJ*

Controlled Environmental Biopiling for Contaminated Land Treatment
 Cyrille Berton, *University College Park, Cork, Ireland*
 Gordon Lightbody, *University College Park, Cork, Ireland*
 Martin Hill, *Cork Institute of Technology, Bishopstown, Cork, Ireland*
 D. Arrigan, *University College Cork, Cork, Ireland*
 Michael Swainson, *Building Research Establishment Ltd, Watford, Hertfordshire, UK*
 Bridget Corcoran, *Response Environmental Technologies Ltd, Malby, South Yorkshire, UK*

The Adsorption of Chromium to Hydrous Manganese Oxides Produced during In-Situ Oxidation using Permanganate
 Kelly A. Frasco, *Carus Chemical Company, LaSalle, IL*
 Elizabeth L. Vlastnik, *Carus Chemical Company, LaSalle, IL*
 Philip A. Vella, *Carus Chemical Company, LaSalle, IL*

2:45 PM Bacterial Degradation of Polycyclic Aromatic Hydrocarbons in Surface Sediments of Coastal Ecosystems
 Michael T. Montgomery, *Naval Research Laboratory, Washington, DC*
 Chris L. Osburn, *Naval Research Laboratory, Washington, DC*
 Thomas J. Boyd, *Naval Research Laboratory, Washington, DC*
 Sheila Reatherford, *Geo-Centers, Inc., Newton Center, MA*
 David C. Smith, *University of Rhode Island, Narragansett, RI*

Electrical Resistance Heating for Remediation of Chlorinated Solvents in Low Permeability Soils
 Matthew A. Hunt, *Southern Div Naval Facilities Engineering Command, N. Charleston, SC*
 Greg Beyke, *Southern Div Naval Facilities Engineering Command, N. Charleston, SC*
 Casey Hudson, *Southern Div Naval Facilities Engineering Command, N. Charleston, SC*

In-Situ Chemical Oxidation Misfires and Recent Innovative Improvements
 Ron Adams, *EBSI, Inc., Ponte Vedra, FL*
 Ian T. Osgerby, PhD, PE, *USACE/CENAE, Concord MA*
 Dr. Bill Mahaffey, *Pelorus Labs*
 Dr. Bill Slack, *FRx*
 Mark Vigneri, *EBSI, Inc.*

3:10 PM Questions

Questions

Questions

3:20 PM Break

Break

Break

3:50 PM Remediation of PCB-Contaminated Sediments Using Colloidal Zero-Valent Iron
 Kevin H. Gardner, *University of New Hampshire, Durham, NH*
 Deana Aulisio, *University of New Hampshire, Durham, NH*
 Jean C. Spear, *University of New Hampshire, Durham, NH*

Beneficial Reuse of Diesel-Impacted Soil from Pipeline Release on Tribal Land
 Mark Kemner, *Maxim Technologies, Inc., Missoula, MT*
 Rick Greiner, B.S., *Geoscience, Conoco Inc., Houston, TX*
 Seth Makepeace, *Confederated Salish and Kootenai Tribes, Pablo, Montana*

WEDNESDAY PM Sessions 3B and 4 on following Page

4:15 PM Pilot-Scale Demonstration of In-Pile Thermal Destruction of Chlorobenzene Contaminated Soil and Sediments
 Ralph S. Baker, Ph.D., *TerraTherm, LLC, Fitchburg, MA*
 Robert J. Bukowski, P.E., *TerraTherm, LLC, Fitchburg, MA*
 Hugh McLaughlin, Ph.D., P.E., *Groton, MA*

Characterization and Remediation of a Former Drop Forge
 Nancy E. Milkey, *Tighe & Bond, Westfield, MA*

4:40 PM A Toxicity Assessment Approach for Evaluation of In-Situ Bioremediation of PAH Contaminated Sediments
 Henry H. Tabak, *US EPA, Cincinnati, OH*
 James M. Lazorchak, *US EPA, Cincinnati, OH*
 Mark E. Smith, *SoBran, Inc, Cincinnati, OH*
 Jim Ferretti, *US EPA, Region 2, Edison, NJ*

Questions

5:05 PM Questions

End

5:30 PM End

PM SESSIONS

Wednesday

3B: TRAINING RANGE RESIDUES

168C Campus Center

Sponsored by AMEC EARTH & ENVIRONMENTAL, INC.

Moderators: **Robert H. Clemens**, AMEC Earth and Environmental, Inc., Westford, MA

Mark Begley, MA Dept of Environmental Protection

4: BIOMARKERS FOR CONTAMINATION: HIERARCHICAL APPROACHES

1109 Campus Center

Moderators: **Ed Zillioux**, FPL Environmental Services, Juno Beach, FL

Jim Newman, Pandion Systems, Gainesville, FL

1:30 PM	Fluorescence Based Detection of Chemically Induced DNA Damage Kumaran Ramanathan, <i>US EPA, Las Vegas, NV</i> Kim R. Rogers, <i>US-EPA, Las Vegas, NV</i>
1:55 PM	Interpretation of Vitellogenin Gene Expression and Protein Production as Predictors of Exposures to Xenoestrogens and Potential Adverse Reproductive Effects in Fish Patricia Cline, <i>Golder Associates, Gainesville, FL</i>
2:20 PM	Biosensors and Bioanalytical Microsystems for the Rapid and Specific Detection of Pathogenic Organisms Antje J. Baeumner, <i>Cornell University, Ithaca, NY</i>
2:45 PM	An Overview of Ecological Indicators: Putting Biomarkers and Bioindicators in Context James R. Bernard, <i>Environmental Management Consulting, Harpswell, ME</i>
3:10 PM	Questions
3:20 PM	Break
3:50 PM	Environmental Fate and Transport Modeling of Explosives and Propellants in the Vadose Zone Jay L. Clausen, <i>AMEC Earth & Environmental, Westford, MA</i> Diane M. Curry, <i>AMEC Earth & Environmental, Westford, MA</i> Joseph Robb, <i>AMEC Earth & Environmental, Westford, MA</i> Bill Gallagher, <i>MAARNG, Camp Edwards, MA</i>
4:15 PM	Development of a Field Analytical Platform for Energetic Residues in Soil and Water Ned Tillman, <i>Columbia Technologies, Inc., Baltimore, MD</i> Keith Henn, <i>Tetra Tech NUS, Inc., Pittsburgh, PA</i> Dr. William Lacourse, <i>University of Maryland</i> Mike Maughon, <i>Southern Division Naval Facilities Engineering Command, North Charleston, SC</i>
4:40 PM	Sampling for Explosives-Residues at Fort Greely, Alaska Marianne E. Walsh, <i>US Army Engineer and Development Center, Hanover, NH</i> Charles M. Collins, <i>US Army Engineer and Development Center, Hanover, NH</i>
5:05 PM	RangeSafe: Meeting the Environmental Challenges of Small Arms Training Through Innovative Technology Application James Frankovic, <i>US Army ARDEC Armament Systems Process Division, Picatinny Arsenal, NJ</i>
5:30 PM	Questions
5:40 PM	End

AM SESSIONS

1: ENVIRONMENTAL FORENSICS II

Campus Center Auditorium

Moderator: **Dallas Wait**, Gradient Corporation, Cambridge, MA

A Comparison of XRF Data with ICP/AA Data

Timothy J. Boyle, *MA DEP, Wilmington, MA*
John Fitzgerald, *MA DEP, Wilmington, MA*

Characterization or Identification of Organic Compounds by Ion Composition Elucidation (ICE) using Gas Chromatography/High Resolution Mass Spectrometry

Andrew H. Grange, *US EPA, NERL, Las Vegas, NV*
G. Wayne Sovocool, *US EPA, NERL, Las Vegas, NV*

Molecular Characterization of Anthropogenic PAHs in Sediments of the Thea Foss/Wheeler Osgood Waterways, Tacoma, Washington

Scott A. Stout, Ph.D., *Battelle, Duxbury, MA*
Allen D. Uhler, Ph.D., *Battelle, Duxbury, MA*

Questions

Break

Approaches for Fingerprinting PCBs at Contaminated Waste Sites

Henry Camp, *Arthur D. Little, Inc., Cambridge, MA*
Eric Butler, *Gradient Corporation, Cambridge, MA*
Linda Cook, *Arthur D. Little, Inc., Cambridge, MA*

Sourcing PAH with Innovative Methodologies

Stephen Emsbo-Mattingly, *Battelle Memorial Institute, Duxbury, MA*

Andrew Coleman, Ph.D., *Electric Power Research Institute, Palo Alto, CA*

Arthur Chin, Ph.D., *ExxonMobil Environmental Remediation, Linden, NJ*

Scott Stout, Ph.D., *Battelle Memorial Institute, Duxbury, MA*
Paul Boehm, Ph.D., *Battelle Memorial Institute, Duxbury, MA*

Allen Uhler, Ph.D., *Battelle Memorial Institute, Duxbury, MA*
Kevin McCarthy, *Battelle Memorial Institute, Duxbury, MA*

Distribution of Lead Contamination in Soils of Florida Shooting Ranges

Ming Chen, *University of Florida, Belle Glade, FL*
Lena Q. Ma, *University of Florida, Gainesville, FL*
Samira H. Daroub, *University of Florida, Belle Glade, FL*
Xinde Cao, *University of Florida, Gainesville, FL*
Willie G. Harris, *University of Florida, Gainesville, FL*

Questions

Lunch (12:05 pm)

WORKSHOPS

7 - 10 pm

8) **Forensic Environmental Geochemistry: Petroleum Fuels**
(*Campus Center Auditorium*)

9) **MGP Site Closures: Experiences from the Trenches - Point Counter Point Technology Review**
(*168C Campus Center*)

10) **Environmental Fate of Hydrocarbons in Soils and Groundwater** (*101 Campus Center*)

Wednesday

2: REMEDIATION- GROUNDWATER

101 Campus Center

Moderators: **Scott DeMuth**,
Sears, Roebuck and Co,
Hoffman Estates, IL

3: ARSENIC

168C Campus Center

Moderator: **Mike Ruby**,
Exponent, Boulder, CO

4: SITE ASSESSMENT / ENVIRONMENTAL FATE

1109 Campus Center

Moderator: **James Dragon**,
The Dragon Corp.,
Farmington Hills, MI

Electrolytic Aeration of Anoxic Groundwater- A Lab Scale Study and Modeling of the Process

Ramesh K. Goel, *University of South Carolina, Columbia, SC*
Lubo Liu, *University of South Carolina, Columbia, SC*
Joseph R.V. Flora, *University of South Carolina, Columbia, SC*
Dr Michael E. Meadows, *University of South Carolina, Columbia, SC*

Natural and Anthropogenic "Background" Levels of Arsenic in Florida's Soils

Ming Chen, *University of Florida, Belle Glade, FL*
Lena Q. Ma, Ph.D., *University of Florida, Gainesville, FL*
Samira H. Daroub, Ph.D., *University of Florida, Belle Glade, FL*
Tait Chirenje, *University of Florida, Gainesville, FL*
Willie, G. Harris, *University of Florida, Gainesville, FL*

Innovative Methods to Identify, Map and Plot Historic Areas of Environmental Concern for the Purpose of Developing Accurate Sampling Plans

Neil Jiorle, *Schoor DePalmer, Manalapan, NJ*

8:30 AM

Evaluation of Aerobic Degradation of Pentachlorophenol in Groundwater Using ORC™

Paul A. Landin, *CH2M HILL, Virginia Beach, VA*
Scott J. MacEwen, *CH2M HILL, Herndon, VA*
Dawn M. Hayes, *Commander, LANTNAVFACENG-COM, Norfolk, VA*

Naturally Occurring Arsenic in Overburden in Central Massachusetts

Kevin A. Doherty, *Knoll Environmental, Inc., Needham, MA*
Rudolph Hon, *Boston College, Chestnut Hill, MA*

Alternatives to NAPL Thickness Measurements for NAPL Characterization

Stephen S. Boynton, *Ambient Engineering, Inc., Concord, MA*
Gerry Garibay, *El Paso Corporation, Houston, TX*

8:55 AM

Eleven Years of Permeable Reactive Barrier (PRB) Technology for the Remediation of VOC Contaminated Groundwater

Stephanie O'Hannesin, *EnviroMetal Technologies, Inc., Waterloo, ON, Canada*

Bench-scale Evaluation of Sorbents for In-Situ Treatment of Groundwater Arsenic

Richard W. Amseth, *Tetra Tech NUS, Inc., Oak Ridge, TN*
Raju Dantuluri, *Tetra Tech NUS, Inc., Oak Ridge, TN*
Steve McCoy, *Tetra Tech NUS, Inc., Oak Ridge, TN*
Barbara Nwokike, *Southern Division Naval Facilities Engineering Command, North Charleston, SC*

Natural Attenuation of a Co-contaminated Solvent-Metal Plume

Ronnie Britto, *Ensafe Inc, Memphis, TN*
Allison Harris, *Ensafe Inc, Memphis, TN*
William Hill, *Southern Division Naval Facilities Engineering Command, North Charleston, SC*

9:20 AM

Questions

Questions

Questions

9:45 AM

Break

Break

Break

9:55 AM

Containing the Blob: Treatment of Groundwater Contaminated with Coal Tar, Naphthalene, Methyl Naphthalene, Benzene and other Associated Contaminants

Brian Butters, *Purifics Environmental Technologies, Inc., London, ON, Canada*
Tony Powell, *Purifics Environmental Technologies, Inc., London, ON, Canada*

Elevated Arsenic and Iron in Groundwater at a Gravel Pit Reclamation Project Using Manufactured Topsoil

Richard S. Behr, *Maine Dept of Environmental Protection, Augusta, ME*

Downward Migration of LNAPL at the Hadnot Point Industrial Area, Marine Corps Base, Camp Lejeune, North Carolina

Lori Parks Reuther, *Naval Facilities Engineering Command, Norfolk, VA*
James A. Dunn, *The IT Group, Alpharetta, GA*

10:25 AM

Remediation of Perchlorate-Contaminated Groundwater and Soil at Naval Weapons Industrial Reserve Plant (NWIRP) McGregor, Texas

Ronnie Britto, *EnSafe Inc., Memphis, TN*
Dan Cowan, *EnSafe Inc., Memphis, TN*
Mark Craig, *Southern Division, Naval Facilities Engineering Command, North Charleston, SC*
Alan Jacobs, *EnSafe Inc., Memphis, TN*
Michael Perlmutter, *EnSafe Inc., Memphis, TN*

Arsenic in Landfill Environmentals, Massachusetts, USA

Rudolph Hon, *Boston College, Chestnut Hill, MA*
William C. Brandon, *USEPA Region I: New England Region, Boston, MA*
Carol L. Stein, *Gannett Fleming, Inc., New Ipswich, NH*
David F. McTigue, *Gannett Fleming, Inc., New Ipswich, NH*
Thomas Davidson, *Boston College, Chestnut Hill, MA*

Natural Attenuation Rate Clarifications: The Devil's in the Details

Joseph E. Odencrantz, *Tri-S Environmental Consultants, Costa Mesa, CA*
Mark D. Varljen, *SCS ENGINEERS, Bellevue, WA*
Richard A. Vogl, R.G., *CHG, HydroGeo Consultants, Costa Mesa, CA*

10:50 AM

Optimization of Air Sparge Treatment System - Proven Practical Measures

Mary B. Hayes, *ENSR International, Westford, MA*
Dennis Rentschler, *ENSR International, Westford, MA*
Kevin Whitney, *ENSR International, Westford, MA*

Arsenic Geochemistry: Ponding, Slime, Iron and Elevated Arsenic in Groundwater

Eric Butler, *Gradient Corporation, Cambridge, MA*
Chris Slagle, *Martin & Slagle, Black Mountain, NC*
Robert Martin, *Martin & Slagle, Black Mountain, NC*
Damian Shea, Ph.D., *North Carolina State University, Raleigh, NC*

Questions

11:15 AM

Evaluating the Success of Groundwater and Soil Cleanup at Sites Impacted by Fuel Oxygenates

Marilyne C. Laugier, *Malcolm Pirnie, Inc., Emeryville, CA*
Rula A. Deeb, Ph.D., *Malcolm Pirnie, Inc., Emeryville, CA*
Michael C. Kavanaugh, Ph.D., P.E., *Malcolm Pirnie, Inc., Emeryville, CA*

Questions

11:40 AM

Lunch (12:05 pm)

Lunch

Lunch

Noon

PM SESSIONS

Thursday

1: SEDIMENTS III

Campus Center Auditorium
Moderator: **Henry Tabak**,
US EPA, ORD, Cincinnati, OH

2: RISK ASSESSMENT

101 Campus Center
Moderator: **Barbara Callahan**,
University Research, Grantham NH

1:00 PM	Characterization and Mapping of Contaminated Sediments, Windermere Arm, Hamilton Harbour, Ontario, Canada Alex J. Zeman, <i>Environment Canada, Burlington, ON, Canada</i> Timothy S. Patterson, <i>Environment Canada, Burlington, ON, Canada</i>	Differences in the Dermal Bioavailability of Toluene and Phenol Aged in Soil Mohamed S. Abdel-Rahman, <i>University of Medicine and Dentistry of New Jersey, Newark, NJ</i> Gloria A. Skowronski, <i>University of Medicine and Dentistry of New Jersey, Newark, NJ</i> Rita M. Turkall, <i>University of Medicine and Dentistry of New Jersey, Newark, NJ</i>
1:25 PM	Estimation of Sediment PCB Concentrations and Masses in a Large Water Body R. Scott Wade, <i>Limno-Tech Inc. (LTI), Ann Arbor, MI</i> Joe V. DePinto, <i>Limno-Tech Inc. (LTI), Ann Arbor, MI</i> Penelope E. Moskus, <i>Limno-Tech Inc. (LTI), Ann Arbor, MI</i> John R. Wolfe, <i>Limno-Tech Inc. (LTI), Ann Arbor, MI</i>	Oral Bioaccessibility of Dioxins/Furans at Low Concentrations (50-350 ppt TEQ) in Soil Mike Ruby, <i>Exponent, Boulder, CO</i> Kurt A. Fehling, <i>Exponent, Oakland, CA</i> Dennis J. Paustenbach, <i>Exponent, Menlo Park, CA</i>
1:50 PM	Stormwater Impact on Sediment Quality as Determined by Microbial Indicators Hueiwang Jeng, <i>Tulane University, New Orleans, LA</i> A.J. Engleande, <i>Tulane University, New Orleans, LA</i> Reda Baker, <i>Tulane University, New Orleans, LA</i> Henry Bradford, <i>Louisiana Department of Health and Hospital, New Orleans, LA</i>	Volatile Air Emissions from Soil or Groundwater - Are They as Significant as Models Say They Are? Jackie Wright, <i>URS Australia Pty Ltd, North Sydney, NSW, Australia</i> Martin Howell, <i>URS Australia Pty Ltd, North Sydney, NSW, Australia</i>
2:15 PM	Electroosmotic Dewatering of Dredged Sediments Krishna R. Reddy, <i>University of Illinois, Chicago, IL</i>	Groundwater to Indoor Air - The Exposure Pathway of the Future David L. Thompson, <i>J M Sorge, Inc., Somerville, NJ</i> Todd Huffman, <i>J M Sorge, Inc., Somerville, NJ</i> Joseph M. Sorge, <i>J M Sorge, Inc., Somerville, NJ</i>
2:40 PM	Questions	Questions
2:55 PM	Break	Break
3:25 PM	Assessing the Effectiveness of Sediment Remediation using Contaminant Transport Models Hans P. Holmberg, <i>Limno-Tech, Inc. (LTI), Hudson, WI</i> Joseph V. DePinto, <i>Limno-Tech, Inc. (LTI), Ann Arbor, MI</i> Todd M. Redder, <i>Limno-Tech, Inc. (LTI), Ann Arbor, MI</i> John R. Wolfe, <i>Limno-Tech Inc. (LTI), Ann Arbor, MI</i>	The Assessment of Toxicity and Biodegradability of New Energetic Ingredient Hexanitrohexaazaisowurtzitan (CL-20) in Soil Nikolay S. Strigul, <i>Stevens Institute of Technology, Hoboken, NJ</i> Nikolai S. Panikov, <i>Stevens Institute of Technology, Hoboken, NJ</i> Christos Christodoulatos, <i>Stevens Institute of Technology, Hoboken, NJ</i> Steven M. Nicolich, <i>US Army TACOM-ARDEC, Picatinny Arsenal, NJ</i>
3:50 PM	Determination of the Environmental Impact of Consolidation Induced Convective Transport of Radiolabeled Contaminants through Capped Sediment Using a Research Centrifuge Horace Moo-Young, <i>Lehigh University, Bethlehem, PA</i> Tommy Myers, <i>Waterways Experiment Station, Vicksburg, MS</i> Barbara Tardy, <i>Waterways Experiment Station, Vicksburg, MS</i> Richard Ledbetter, <i>Waterways Experiment Station, Vicksburg, MS</i> Wipawi Vanadit-Ellis, <i>Waterways Experiment Station, Vicksburg, MS</i> Kassahun Sellasie, <i>Lehigh University, Bethlehem, PA</i>	Risk Assessment Applications in Atypical Circumstances Christopher Teaf, <i>Florida State University, Tallahassee, FL</i> Douglas J. Covert, <i>Hazardous Substance & Waste Management Research, Tallahassee, FL</i> R. Marie Coleman, PhD, <i>Hazardous Substance & Waste Management Research, Tallahassee, FL</i>
4:15 PM	Reverse Layering for In-Situ Burial of Nutrient-Rich or Contaminated Sediments William B. Kerfoot, <i>K-V Associates, Inc., Mashpee, MA</i> Stephen G. Seymour, <i>Town of Barnstable, Department of Public Works, Hyannis, MA</i>	Communicating Risk to Diverse Stakeholders: A European Case Study Candace S. Chandra, <i>Canary Strategies, LLC, Florence, Italy</i> Daniel Merendoni, <i>Canary Strategies, LLC, Florence, Italy</i>
4:40 PM	Questions	Questions
5:00 PM	End	End

Poster Sessions

ANALYSIS

1. A Pilot Study of Passive Diffusion Bag (PDB) Sampling in a Fractured Bedrock Environment
Thomas W. Biolsi, *EA Engineering, Science, and Technology, Inc., Iselin, NJ*
Steven G. Feldmann, *EA Engineering, Science, and Technology, Inc., Iselin, NJ*
Barbara A. O'Grady, *EA Engineering, Science, and Technology, Inc., Iselin, NJ*
Jeffery M. Dale, *United States Navy, Lester, PA*

2. Correlation of Field Analytical Detectors in the Analysis of Soil Contaminated with Diesel Fuel
Clayton J. Clark II, *University of Florida, Gainesville, FL*
Joseph J. Delfino, *University of Florida, Gainesville, FL*

3. Using Selected Ion Monitoring to Achieve Risk Based Concentration Levels in Ambient Air
Alyson H. Fortune, *ENSR Air Toxics Laboratory, Harvard, MA*
Richard L. Wellman, *ENSR International, Westford, MA*

4. EPA Performance Study for Field Measurement of Total Petroleum Hydrocarbons using Ultraviolet Fluorescence Technology
Steve Greason, *Sitelab Corporation, Hanover, NH*

5. Analysis of Volatile Organics in Produce Using Solid Phase Microextraction and GC/MS
C.K. Tan, Ph.D., *Southwest Research Institute, San Antonio, TX*
Kevin Shannon, *Southwest Research Institute, San Antonio, TX*
Robert Acosta, *Southwest Research Institute, San Antonio, TX*
Jesse Rodriguez, *Southwest Research Institute, San Antonio, TX*
Ron Porter, Ph.D., *MitreTek, San Antonio, TX*

6. Laboratory Determination of Diffusion Coefficient of Contaminant Ions using Clay Soil
Xi Yong-hui, *Tongji University, Shanghai, PR China*
Ren Jie, *Tongji University, Shanghai, PR China*
Hu Zhong-xiong, *Tongji University, Shanghai, PR China*

7. Large Volume Sample Stacking for Analysis of EDTA by Capillary Electrophoresis
Zhiwei Zhu, *Centre for Advanced Water Technology, Singapore*
Lifeng Zhang, *Centre for Advanced Water Technology, Singapore*
Zhiwei Zhu, *Centre for Advanced Water Technology, Singapore*
Marimuthu Arun, *Centre for Advanced Water Technology, Singapore*
Zhaoguang Yang, *Centre for Advanced Water Technology, Singapore*

ARSENIC

8. Arsenic Everywhere
Corlyss B. Lewis, *Industrial Test Systems, Inc., Rock Hill, SC*
Ivars Jaunakais, *Industrial Test Systems, Inc., Rock Hill, SC*

BIOREMEDIATION

9. Treatment of OBM Drill Cuttings Soil by Elimination of Biodegradation Limiting Factors using Bio-augmented Landfarming
SM Afifi, *United Environmental, Inc. (Middle East Division), Cairo, Egypt*
JW Warner, *Professor of Civil Engineering, Colorado State University, Ft. Collins, CO*

10. Co-Composting of Creosote-Contaminated Soil with Cattle Manure and Vegetable Waste for the Biodegradation of Creosote in Soil
Harrison I. Atagana, *Mangosuthu Technikon, Jacobs, Durban, South Africa*
R.J. Haynes, *University of Natal, Pietermaritzburg South Africa*
FM Wallis, *University of Natal, Pietermaritzburg South Africa*

11. Bioremediation of Polyaromatic Hydrocarbons Using a Groundwater Recirculating Treatment System
Peter J. Cagnetta, *Science Applications International Corporation, Harrisburg, PA*
Daniel B. Lewis, *Spotts, Stevens, and McCoy, Inc., Reading, PA*

12. Stimulation of Environment-Polluting Oil Residues Degradation by Microbial Associations
Anca Voicu, *Institute of Biology of Romanian Academy, Bucharest, Romania*
Smaranda Dobrota, *Institute of Biology of Romanian Academy, Bucharest, Romania*
Ioana G. Petrisor, *University of Southern California, Los Angeles, CA*
Mugur Stefanescu, *Institute of Biology of Romanian Academy, Bucharest, Romania*
Mihaela Lazaroaie, *Institute of Biology of Romanian Academy, Bucharest, Romania*
Ioan I. Lazar, *Institute of Biology of Romanian Academy, Bucharest, Romania*

13. Stimulating Simultaneous Anaerobic Oxidation of BTEX and Reductive Dechlorination of Chloroethenes in Groundwater
Pawan K. Sharma, *Camp, Dresser, & McKee, Inc., Walnut Creek, CA*
Dalia Hildebrand, *Camp, Dresser, & McKee, Inc., Walnut Creek, CA*

14. Microbial Degradation of Detoxification Products from Chemical Warfare Agents Destruction and Organophosphorus Herbicides
Ivan I. Starovoirov, *G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms RAS, Moscow region, Russia*
Inna T. Ermakova, *G.K. Skryabin Institute of Biochemistry and Physiology of Microorganisms RAS, Moscow region, Russia*
Gennady A. Zharikov, *Research Centre for Toxicology and Hygienic Regulations of Biopreparations, Moscow region, Russia*

In addition to the platform sessions, supplemental information will be presented as posters throughout the exhibit area. Poster presenters will be available from 4-6pm on Tuesday and 1-3pm on Wednesday to interact on a one-to-one basis.

CHEMICAL OXIDATION

15. Ozone-Peroxide Advanced Oxidation Water Treatment System for Treatment of Chlorinated Solvents and 1,4-Dioxane
Reid H. Bowman, *Applied Process Technology, Inc., Pleasant Hill, CA*
Philip Miller, *England Geosystem, Inc, Irvine, CA*
Michael Purchase, *Orion Environmental, Inc., Long Beach, CA*
Randy Schoellerman, *San Gabriel Basin Water Quality Authority, Covina, CA*

16. Implementation of an In Situ Chemical Oxidation Program for Remediation of Saturated Zone Petroleum Hydrocarbons at the Navy Exchange Service Station Naval Air Station, Brunswick, Maine
Alexander C. Easterday, *EA Engineering, Science, and Technology, Bedford, MA*
Curtis J. Varner, *EA Engineering, Science, and Technology, Newburgh, NY*

17. Cost Effective Application of Modified Fenton's Reagent at an Operational Dry Cleaners Site
Prasad K. Kakarla, *In Situ Oxidative Technologies, Inc., West Windsor, NJ*
Richard S. Greenberg, *In Situ Oxidative Technologies, Inc., West Windsor, NJ*

18. Thermally Activated Peroxydisulfate Oxidation of Polychlorinated Biphenyls (PCBs)
Paul F. Killian, *University of Massachusetts Lowell, Lowell, MA*
Clifford J. Bruell, Ph.D., *University of Massachusetts Lowell, Lowell, MA*

19. The Thermodynamics of Sodium Permanganate Oxidative Reactions
Brenda K. Veronda, *Carus Chemical Company, Peru, IL*
Ken Pisarczyk, *Carus Chemical Company, Peru, IL*
Erik Pedersen, *Carus Chemical Company, LaSalle, IL*

CLEANUP STANDARDS

20. Chemical Contamination and Cleanup Standard Setting of Herbicides in Phaozom of Northeastern China
Qixing Zhou, *Chinese Academy of Sciences, Shenyang, P.R. China*

ENVIRONMENTAL FATE

21. Slow Desorption of Phenanthrene from Silica Particles: Influence of Pore Size, Pore Water, and Aging Time
Michael H. Huesemann, *Pacific Northwest National Laboratory, Sequim, WA*
Timothy J. Fortman, *Pacific Northwest National Laboratory, Sequim, WA*
Robert G. Riley, *Pacific Northwest National Laboratory, Sequim, WA*
Christopher J. Thompson, *Pacific Northwest National Laboratory, Sequim, WA*
Zheming Wang, *Pacific Northwest National Laboratory, Sequim, WA*
Michael J. Truex, *Pacific Northwest National Laboratory, Sequim, WA*
Brent Peyton, *Washington State University, Pullman, WA*

22. Degradation of Persistent Organochlorine Pesticides in Rhizosphere Soils
XM Zhu, *Chinese University of Hong Kong, HK SAR, P.R. China*
KC Lam, *Chinese University of Hong Kong, HK SAR, P.R. China*
S. Tao, *Peking University, Beijing, P.R. China*

ENVIRONMENTAL FORENSICS

23. Forensic Identification of the Probable Source of PAHs in Sediments at a Suburban Lake
Hector D. Laguerre, *MA Dept of Environmental Protection, Wilmington, MA*
Nicholas P. Corso, *Woods Hole Group Environmental Laboratories, Raynham, MA*

24. Sourcing Hydrocarbons at Fire Training Areas: A Molecular Characterization of the Combusted and Evaporated Residues of Distillate Fuels
Stephen Emsbo-Mattingly, *Battelle Memorial Institute, Duxbury, MA*
Scott Stout, *Battelle Memorial Institute, Duxbury, MA*
Allen Uhler, *Battelle Memorial Institute, Duxbury, MA*
Kevin McCarthy, *Battelle Memorial Institute, Duxbury, MA*

25. The Analysis of PCBs in New Bedford Harbor Sediments: Selecting and Optimizing Immunoassay, GC/ECD, and GC/MS Methods Based on Multiple Site-Specific DQOs
Stephen Emsbo-Mattingly, *Battelle Memorial Institute, Duxbury, MA*
Helen Douglas, *Foster Wheeler Environmental Corporation, Boston, MA*
Andy Beliveau, *U.S. EPA Environmental Services Division, North Chelmsford, MA*
Marie Wojtas, *U.S. Army Corps of Engineers, Concord, MA*
Yixian Zhang, *Foster Wheeler Environmental Corporation, Boston, MA*
Heather Ferro, *Foster Wheeler Environmental Corporation, Boston, MA*

26. Fingerprinting Organic Lead Species in Automotive Gasolines and Free Products Using Direct Injection GC/MS
Edward Healey, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
S. Andrew Smith, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Kevin J. McCarthy, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Scott A. Stout, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Richard M. Uhler, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Allen D. Uhler, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Stephen D. Emsbo-Mattingly, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Gregory S. Douglas, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*

27. Allocation of Commingled Hydrocarbons Derived from Manufactured Gas Plant versus Petroleum Handling Operations
S. Andrew Smith, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Edward Healey, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Kevin J. McCarthy, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Scott A. Stout, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Allen D. Uhler, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Stephen D. Emsbo-Mattingly, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*
Gregory S. Douglas, *Battelle Environmental Forensics Investigation Group, Duxbury, MA*

28. Passive Diffusion Bag Sampler Results from Multiple DoD Installations
John P. Tunks, *Parsons, Denver, CO*
John Hicks, *Parsons, Denver, CO*
Javier Santillan, *AFCEE/ERT, Brooks AFB, TX*
Raphael Vazquez, *AFCEE/ERT, Brooks AFB, TX*

29. Weight of Evidence Evaluation of Net Sedimentation and Natural Attenuation Rates, Lower Fox River (WI)
Timothy J. Dekker, *Limno-Tech, Inc. (LTI), Ann Arbor, MI*
Gregory J. Gerstner, *Limno-Tech, Inc. (LTI), Ann Arbor, MI*
Richard D. McCulloch, *Limno-Tech, Inc. (LTI), Ann Arbor, MI*
Cynthia P.E. Valente, *Limno-Tech, Inc. (LTI), Ann Arbor, MI*
John R. Wolfe, *Limno-Tech, Inc. (LTI), Ann Arbor, MI*

HEAVY METALS

30. Heavy Metal Distribution in Sediment Profiles along the Adyar River, Tamil Nadu, India
Hema Achyuthan, V. Dhinakaran, K. Selvaraj Kumar, and S. Srinivasalu
1. *Centre for Geoscience and Engineering, Anna University, Chennai*
2. *Dept. of Geology, University of Madras, Chennai*

31. An Investigation into the Inhibitory of Lead and Nickel on the Mineralization of Hydrocarbons in Soil
Esmaeil S. AlSaleh, *Kuwait University, AL-Safat, Kuwait*
Ms Hana F. Drobiaova, *Kuwait University, AL-Safat, Kuwait*
Dr Husain A. Al-Awadhi, *Kuwait University, AL-Safat, Kuwait*
Dr Christian Obekwi, *Kuwait University, AL-Safat, Kuwait*

32. Integrated Pathway Models to Refine Arsenic and Selenium Concentration Estimates from a Proposed Fly Ash Mono-Fill Re-use
Jeffrey A. Berk, *URS Corporation, Cleveland, OH*
Joanna Moreno, *URS Corporation, Denver, CO*

33. Remediation of Lead Shot Contaminated Soils on Residential Properties in Southeastern Massachusetts
Dan Crafton, *MA DEP, Lakeville, MA*
Mark Begley, *MA DEP, Boston, MA*
Mike Whiteside, *MA DEP, Lakeville, MA*

34. Analysis of Heavy Metals and Inorganic Anions from Stormwater Runoff in Two Taunton River Tributaries
Cielito M. DeRamos-King, *Bridgewater State College, Bridgewater, MA*
Janelle Brette, *Bridgewater State College, Bridgewater, MA*
Joseph Worrall, *Bridgewater State College, Bridgewater, MA*

35. Sorption of Heavy Metals on Mineral and Organic Fractions of Contaminated Sludge Lagoon Sediment
Lindy Hartley, *University of Toledo, Toledo, OH*
Alison L. Spongberg, *University of Toledo, Toledo, OH*
Deborah A. Neher, *University of Toledo, Toledo, OH*

36. Addressing Multiple Sources of Lead Exposure with a Community-Based Environmental Health Program
Kathy Tegtmeyer, *MFG, Inc., Boulder, CO*
Amy Morrison, *MFG, Inc., Leadville, CO*
Bob Little, *Asarco Incorporated, Denver, CO*

37. Heavy Metal Uptake by Basil (*Osimum basilicum L.*) Grown on Metal Polluted Soils
Valtcho Zheljazkov, *Nova Scotia Agricultural College, Truro, NS, Canada*
Andrew Wilcox, *Harper Adams College, Newport, Shropshire, UK*

38. Mercury in Compost-Soil-Plant System
Valtcho Zheljazkov, *Nova Scotia Agricultural College, Truro, NS, Canada*
Michael Munroe, *Nova Scotia Agricultural College, Truro, NS, Canada*

39. Interactions Between Cadmium and Other Heavy Metals (Lead, Copper, Zinc and Arsenic) in Soil-ribose Systems of Liaoning Province, China
Qixing Zhou, *Chinese Academy of Sciences, Shenyang, P.R. China*
Xin Wang, *Chinese Academy of Sciences, Shenyang, P.R. China*
Yanyu Wu, *Chinese Academy of Sciences, Shenyang, P.R. China*

MISCELLANEOUS

40. Electronic Data Management in RCRA Project- A Case Study
Sandeep Ganesh, *URS Corporation, Cranford, NJ*
Joshua A. Jaffe, *Harding ESE, Edison, NJ*

41. Application of Saline Wastewater for Production of Agricultural Crops
Esmail Malek, *Utah State University, Logan, UT*
Bradley Giles, *Utah State University, Logan, UT*

42. Introducing Water Catchment Quality Control into Urban Development Policy in Cameroon (A Case Study of the Municipal Lake in Yaounde)
Francis Ngwa Niba, *CEI/CAM, Douala Cameroon*

MTBE

43. Microbial Bioremediation of Methyl-tertiary-Betyl-Ether (MTBE)
Diana R. Cundell, *Philadelphia University, Philadelphia, PA*
William H. Brendley, *Philadelphia University, Philadelphia, PA*

44. Determining the Extent of Gasoline Oxygenate Additive Impacts with in a Rural Bedrock Water Supply Aquifer
A. Lee Gustafson, *Harding ESE, Inc., Merrimack, NH*
Thomas W. Lazott, *Harding ESE, Inc., Merrimack, NH*
Jeffrey K. Harshman, *Harding ESE, Inc., Merrimack, NH*
Mark Ledgard, *State of New Hampshire Department of Environmental Services, Concord, NH*

45. Risk-Targeted Remediation for MTBE-Impacted Gasoline Stations
Edward Ralston, *Phillips 66 Company, Roseville, CA*
William B. Kerfoot, *K-V Associates, Inc., Mashpee, MA*
David J. Vossler, *Gettler-Ryan, Inc., Petaluma, CA*

PHYTOREMEDIATION

46. Accumulation of Heavy Metals by Azolla spp.
Anju Arora, *Indian Agricultural Research Institute, N. Delhi, India*
Anjali Pabby, *Indian Agricultural Research Institute, N. Delhi, India*
P.K. Singh, *Indian Agricultural Research Institute, N. Delhi, India*

47. Phytoremediation's Possibility of Food-Chain Contamination
Sandra Benson, *University of South Carolina, Columbia, SC*
David Coyle, *US Forest Service, Aiken, SC*
Lee Newman, *University of South Carolina, Columbia, SC, and The Savannah River Ecology Laboratory, Aiken, SC*

48. Dewatering, Remediation, and Evaluation of Dredged Sediments
Paul Biery, *University of South Carolina, Columbia, SC*
Lee Newman, *University of South Carolina, Columbia, SC, and The Savannah River Ecology Laboratory, Aiken, SC*

49. Soil and Plant Analysis in a Metal Impacted Estuarine System in South Carolina
Jacin A. DuRant, *University of South Carolina, Columbia, SC*
Lee Newman, *University of South Carolina, Columbia, SC, and The Savannah River Ecology Laboratory, Aiken, SC*

50. Toxicity and Bioaccumulation of Lead and Cadmium in Green Macroalgae, *Cladophora fracta*
Maleeya Kruatrachue, *Department of Biology, Mahidol University, Bangkok, Thailand*
Chantana Lamai, *Department of Biology, Mahidol University, Bangkok, Thailand*
Prayad Pokethititook, *Department of Biology, Mahidol University, Bangkok, Thailand*
Suchart Upatham, *Burapha University, Chonburi, Thailand*

51. Using Sediment Slurry Batch Reactors to Evaluate Mercury Methylation with Regard to Sulfate Concentration
Sarah M. Harmon, *University of South Carolina, Columbia, SC*
G. Tom Chandler, *University of South Carolina, Columbia, SC*
Lee Newman, *University of South Carolina, Columbia, SC, and The Savannah River Ecology Laboratory, Aiken, SC*

52. Estimating Efficiencies of Tritium Phytoremediation at the Savannah River Site
Daniel R. Hitchcock, *USDA Forest Service - Savannah River, New Ellenton, SC*
Karin T. Rebel, *Cornell University, Ithaca, NY*
Chris Barton, *USDA Forest Service - Savannah River, New Ellenton, SC*
John Seaman, *UGA Savannah River Ecology Laboratory, Savannah River Site*
Susan J. Riha, *Cornell University, Ithaca, NY*
John I. Blake, *USDA Forest Service - Savannah River, New Ellenton, SC*

53. Microbiota Involved in Vegetation of Sulphidic Mine Tailings: Greenhouse Experiments
Ioana G. Petrisor, *University of Southern California, Los Angeles, CA*
Mugur Stefanescu, *Institute of Biology of Romanian Academy, Bucharest, Romania*
Smaranda Dobrota *Institute of Biology of Romanian Academy, Bucharest, Romania*
Anca Voicu, *Institute of Biology of Romanian Academy, Bucharest, Romania*
Chris M. Teaf, *Institute for International Cooperative Environmental Research, Florida State University, Tallahassee, FL*

54. Removal of Nickel and Lead By Giant Duckweed, Spirodela polyrrhiza (L.)
Prayad Pokethitayook, *Department of Biology, Mahidol University, Bangkok, Thailand*
Piyaporn Waranusantikul, *Department of Biology, Mahidol University, Bangkok, Thailand*
Maleeya Kruatrachue, *Department of Biology, Mahidol University, Bangkok, Thailand*
E. Suchart Upatham, *Burapha University, Chonburi, Thailand*

55. Phytoremediators: Possible Implications in Restoration Ecology and Molecular Medicine
J.Rajiv, *University of Delhi, Delhi, India*
K.K.Aggarwal, *GGG Indraprastha University, Delhi, India*
C.R.Babu, *University of Delhi, Delhi, India*

56. Cultural Approaches to Reduce Nitrate Contamination of Groundwater
Raj K. Shrestha, *Nepal Agri. Research Council, Khumaltar, Lalitpur, Nepal*
Jagdish K. Ladha, *Int. Rice Research Inst., Manila, The Philippines*

57. Metabolic Response of Native Southeastern Trees to Trichloroethylene
Sarah Strycharz, *University of South Carolina, Columbia, SC*
Lee Newman, *University of South Carolina, Columbia, SC, and The Savannah River Ecology Laboratory, Aiken, SC*

58. Utilization of Apoplasmic Space in Tobacco by Genetic Manipulation for Accumulation of Cadmium
Toshihiro Yoshihara, *Central Res Inst Electric Power Ind, Chiba, Japan*
Fumiyouki Goto, *Central Res Inst Electric Power Ind, Chiba, Japan*
Taro Masuda, *Central Res Inst Electric Power Ind, Chiba, Japan*

59. Aromatic Plant Production on Polluted Soils
Valtcho Zhelezkov, *Nova Scotia Agricultural College, Truro, NS, Canada*

RADIONUCLIDES

60. Pre- and Post-Mitigation Measurements of Indoor Radon in Homes with Excessive Radon Concentrations
Douglas G. Mose, *George Mason University, Fairfax, VA*
Fiorella Simoni, *George Mason University, Fairfax, VA*
George W. Mushrush, *George Mason University, Fairfax, VA*

61. Indoor Radon Measurements from Homes in Southern Poland
George W. Mushrush, *George Mason University, Fairfax, VA*
Fiorella Simoni, *George Mason University, Fairfax, VA*
Douglas G. Mose, *George Mason University, Fairfax, VA*

62. Radioecological Monitoring and Decontamination Technology of NORM sludge from Vuctyl Oil and Gas
Vladimir O. Nekouchaev, *Ukhta State University, Ukhta, Russia*
Eugenue I. Krapiivski, *Ukhta State University, Ukhta, Russia*
Victor Ryzhakov, *Vuctyl Company, Severgasprom, Vuctyl, Russia*

RBCA

63. Does RBCA Work?
Emil Onuschak, Jr., *DE Dept of Natural Resources and Environmental Control, New Castle, DE*

REGULATORY

64. Proposed New York State Dredged Material Assessment and In-water or Riparian Dredged Material Management Guidance
Arthur J. Newell, *NYSDEC, Albany, NY*
Alex Lechich, *NYSDEC, Region 2*

REMEDIATION

65. The Organoclay/Carbon Combination of Efficient PCB Removal
George R. Alther, *Biomim, Inc., Ferndale, MI*

66. PCB Contaminated Soil Remediation in a Wetland Buffer Zone using UVF Screening and Weighed Averaging
David Billo, *Paragon Environmental Services, Inc., Norwood, MA*
Steve Greason, *SiteLAB Corporation, Hanover, NH*

67. Bioremediation of Polyaromatic Hydrocarbons Using a Groundwater Recirculating Treatment System
Peter J. Cagnetta, *Science Applications International Corporation, Harrisburg, PA*
Daniel B. Lewis, *Spotts, Stevens, and McCoy, Inc., Reading, PA*

68. Methane Recovery and Generation Pilot Testing from a Solid Waste Management Unit
Peter J. Cagnetta, *Science Applications International Corporation, Harrisburg, PA*
Isaac Diggins, *Science Applications International Corporation, Oak Ridge, TN*
Brooks Abeln, *Science Applications International Corporation, Harrisburg, PA*
John Keiser, *U.S. Army Corps of Engineers, Savannah, GA*
Zainul Kidwai, *U.S. Army Corps of Engineers, Savannah, GA*

69. Rapid Remediation of Jet A Fuel Contamination at the Former Stapleton International Airport in Denver
Dale W. Christensen, *Parsons, Denver, CO*
Paul Kieler, *Department of Aviation, Denver, CO*

70. In Situ Thermally Enhanced SVE with Bioventing for Treatment of Phenols and BTEX in Soils
M. Talaat Balba, Ph.D., *Conestoga-Rovers & Associates (CRA), Inc., Niagara Falls, NY*
Darlene Coons, *Conestoga-Rovers & Associates (CRA), Inc., Niagara Falls, NY*
Cindy Lin, Ph.D., *Conestoga-Rovers & Associates (CRA), Inc., Niagara Falls, NY*
Susan Scrocchi, *Conestoga-Rovers & Associates (CRA), Inc., Niagara Falls, NY*
Alan Weston, Ph.D., *Conestoga-Rovers & Associates (CRA), Inc., Niagara Falls, NY*

71. Evaporate to Remediate Contaminated Soil
Gary N. Dixon, *Severn Trent Services, Inc., Goffstown, NH*

72. Optimization Strategies for Remediation Systems
David E. Fulton, *IT Corporation, Trenton, NJ*

73. Lessons Learned from Relying on Data from Improperly Constructed Monitoring Wells
Joseph R. Havasi, *URS Corporation, Cleveland, OH*

74. A Case Study for Design/Build of a Multi-Phase Extraction System at a Gasoline Station
Thomas W. Porter, *EA Engineering, Science and Technology, E. Syracuse, NY*
James C. Hayward, *EA Engineering, Science and Technology, E. Syracuse, NY*
Denise Wallace, *Fort Drum Military Installation, Fort Drum, NY*

75. Nanoparticle Iron for Source Area Treatment
Richard W. Arnseth, *Tetra Tech NUS, Inc., Oak Ridge, TN*
Keith W. Henn, *Tetra Tech NUS, Inc., Pittsburgh, PA*
Mark Peterson, *Tetra Tech NUS, Inc., Jacksonville, FL*
Dan Waddill, *Southern Division Naval Facilities Engineering Command, North Charleston, SC*
Dana Gaskins, *Southern Division Naval Facilities Engineering Command, North Charleston, SC*

76. Enhanced Recovery of Light Non-Aqueous Liquids Utilizing Preferential Pathways Induced by Subsurface Utilities
Eric V. Johnson, *AMEC Earth & Environmental, Inc., Westford, MA*
Samuel P. Farnsworth, *AMEC Earth & Environmental, Inc., Westford, MA*
Richard Adams, *AMEC Earth & Environmental, Inc., Westford, MA*
W. Patrick Harrison, *CSX Transportation, Inc., Atlanta, GA*

77. Contamination Put to Bed: A North Carolina Furniture Manufacturer's Case Study
John T. Burkart, *Cooper Environmental, Inc., Charlotte, NC*
Dale Lanier, *Cooper Environmental, Inc., Charlotte, NC*

78. Consolidation of Sanitary Landfills
Alejandro J. Sarubbi, *University of Buenos Aires, Buenos Aires, Argentina*
G. Sánchez Sarmiento, *University of Buenos Aires, Buenos Aires, Argentina*

79. The Resolution of Tight Emulsions in Industrial Scale Waste Processing
Robert Scalliet, *Dilitec Corporation, Houston, TX*

80. A Poor Man's Remediation: Low Tech Chemical Oxidation of VOCs in Soil
Lance S. Traves, *Labyrinth Management Group, Medina, OH*
Sheldon Taylor, *American Weather Seal, Norton, OH*

81. The Controlling Action of Barrier Wall on Contaminated Migration
Huang Wei, *Wenzhou University, China*
Ding Wei, *Wenzhou University, WZ, Zhejiang, P.R.China*

82. Lessons Learned in the Use of Modified Fenton's Reagent for the Treatment of Petroleum Contaminated Soil and Groundwater
Brian V. Moran, *Norfolk RAM Group, Holliston, MA*
Charles P. Young, *Norfolk RAM Group, Holliston, MA*
Melissa Parker, *Norfolk RAM Group, Holliston, MA*

83. Containment of NAPL and Passive Hydraulic Control at a Former manufactured Gas Plant Site
Edward P. Zimmerman, *Harding ESE, Inc., Merrimack, NH*
Mark Haney, *Harding ESE, Inc., Merrimack, NH*

SEDIMENTS

84. Utilization of The DQO Process in the Application of Sediment Data to the Sediment Quality Triad and its Outcome
Barbara Albrecht, *EnSafe Inc., Pensacola, FL*
William Hill, *Southern Division Naval Facilities Engineering Command, North Charleston, SC*
Tom Johnston, *Tetra Tech NUS, Inc., Pittsburg, PA*
Allison Harris, *EnSafe Inc., Memphis, TN*

85. Clean-up Goals for a Coal Tar Deposit in a River Located in the Vicinity of a Former MGP
William Ayling, *O'Brien & Gere Engineers, Inc., Syracuse, NY*
Tracy Blazicek, *New York State Electric & Gas Corporation, Binghamton, NY*

86. Human Health Risks Associated with Contaminated Sediment at a Naval Facility in San Francisco Bay
N.L. Bonnevie, *Battelle, Duxbury, MA*
Donald G. Gunster, *Battelle, Duxbury, MA*
Virginia Lau, *Battelle, Duxbury, MA*
Theresa Bernhard, *NAVFAC, Washington DC*
Michael J. Pound, *Southern Division Naval Facilities Engineering Command, San Diego, CA*

87. Use of In-situ Dialyzers for Determination of Sediment Porewater Contaminant Concentrations
A. Lee Gustafson, *Harding ESE, Inc., Merrimack, NH*

88. Remediation Monitoring at the United Heckathorn Superfund Site
Nancy P. Kohn, *Battelle Marine Sciences Laboratory, Sequim, WA*
Carmen White, *U.S. Environmental Protection Agency, Region IX, San Francisco, CA*
Andrew Lincoff, *U.S. Environmental Protection Agency, Region IX Laboratory, Richmond, CA*

89. Capping Contaminated River Sediments
Joseph Mihm, *Camp Dresser & McKee, Massena, NY*
Larry McShea, *Alcoa Inc., Alcoa Center, PA*
Heather VanDewalker, *Blasland, Bouck & Lee, Inc., Syracuse, NY*
James Quadrini, *Quantitative Environmental Analysis, LLC., Montvale, NJ*

90. Remediation of a Sediment Contaminated Pond Located on a Sinkhole
Paul Reeser, *Parsons, Cincinnati, OH*

SITE ASSESSMENT

91. Environmental Screening of an Entire City
Daniel J. Adomaitis, *Illinois State Geological Survey, Champaign, IL*

92. Interim Offshore Monitoring Program at Portsmouth Naval Shipyard
Aaron Bernhardt, *Tetra Tech NUS, Inc., Pittsburgh, PA*
Jo Ellen Hinck, *Tetra Tech NUS, Inc., Pittsburgh, PA*
Debbie Cohen, *Tetra Tech NUS, Inc., Pittsburgh, PA*
Fred Evans, *Engineering Field Activity Northeast, Lester, PA*
Jason Speicher, *Engineering Field Activity Northeast, Lester, PA*
Marty Raymond, *Portsmouth Naval Shipyard, Portsmouth, NH*

93. An Environmental Assessment of the Historic McKinley Bridge and Approach Structures
Mark R. Collier, *Illinois State Geological Survey, Chicago, IL*

94. Defining TCE Plume Source Areas Using the Membrane Interface Probe (MIP)
Beth McAndrews, *Earth Tech, Inc., Englewood, CO*
Bill DiGuseppi, *Earth Tech, Inc., Englewood, CO*
Kim Heinze, *University of Waterloo, Waterloo, Ontario, Canada*

95. Site-to-Background Comparisons for Trace Elements in Soil
Jonathan Myers, *IT Corporation, Albuquerque, NM*
Karen Thorbjornsen, *IT Corporation, Knoxville, TN*

96. Source of Release and Contaminant Levels Used to Prioritize Response Actions
Evelina Vaughan, *MA DEP, Boston, MA*

97. Computer-Assisted Radar Tomography as a Means to Document Subsurface Features in Support of Site Remediation
Michael Warminsky, *AMEC Earth & Environmental, Somerset, NJ*
Stephen E. Posten, *AMEC Earth & Environmental, Somerset, NJ*
Anthony DeRubeis, *Witten Technologies, Inc., Boston, MA*

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B5	TIGG Corporation
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B7	Maxymillian Technologies, Inc.
B8	Niton LLC
B9	DEXSIL Corporation
B10	ENSR International
B11 & B12	Naval Facilities Engineering Service Center
B13	AMEC Earth & Environmental
B14	Regenesi Bioremediation
B15	Parsons
B16	Isotec
B17	US EPA Technology Innovation Office
B18	Purifics Environmental Technologies Inc.
B19	Ion Signature Technology
B20	Stone Environmental, Inc.
B21	Microbial Insights
B22	Varian Inc.
B23	K-V Associates, Inc.
B24	Solinst Canada, Ltd
B25	MEC X, LLC (formally ManTech Environmental)
B26	Creamer Environmental, Inc.
B27	inVenture Technologies, Inc.
B28	Columbia Analytical Services
B29	CRC Press
B30	Rusmar Incorporated
B31	Alpha Analytical Labs
B32	Environmental Business Solutions International, Inc.
B33	TerraTherm, Inc.
B34	Microseeps, Inc.
B35	Zymax Forensics
B36	Dewind Environmental
B37	Forrester Environmental Services, Inc.
B38	EnviroMetal Technologies, Inc.
B39	Eastern Analytical, Inc.
T1	Earthline Technologies
T2	Adirondack Environmental Services, Inc.
T3	Geovation Technologies, Inc.
T4	Hydrograss Technologies
T5	Environmental Marketing Group, Inc.

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 Robert Morrison, Ph.D., *R. Morrison & Associates, Inc.*
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 Mike Reynolds, Ph.D., *USA - Cold Regions Research and Engineering Laboratory*
 Michael Sivak, *US EPA, Region 2*
 Henry H. Tabak, *US EPA, ORD*
 Larry J. Zaragoza, *D.Env., US EPA*

Conference at a Glance

Monday, October 21, 2002

Workshops

- 10:00 am - 5:00 pm 1) **The Indoor Air Exposure Pathway from Chlorinated Solvent Contaminated Groundwater** (Campus Center Auditorium)
- 10:00 am - 5:00 pm 2) **Theory and Use of Field Portable X-ray Fluorescence for Soil Analysis** (917 Campus Center)
- 10:00 am - 5:00 pm 3) **In-Situ Chemical Oxidation Workshop** (168C Campus Center)
- 1:00 - 5:00 pm 4) **Workshop on Current Spectrochemical Techniques for Determining Heavy Metals in Sediments and Soils** (904-08 Campus Center)
- 1:00 - 5:00 pm 5) **Practical Remediation of Volatile Organic Compounds in Soil and Groundwater** (101 Campus Center)

Tuesday, October 22, 2002

Platform Presentations

8:30am-Noon

Session 1: *Advances in In-Situ Remediation* (Campus Center Auditorium)

Session 2: *Phytoremediation* (Bowker Auditorium, Stockbridge Hall)

Session 3: *Heavy Metals* (101 Campus Center)

1:30pm-5:30pm

Session 1: *MTBE* (Campus Center Auditorium)

Session 2: *Sediments I* (Bowker Auditorium, Stockbridge Hall)

Session 3A: *RBCA* (101 Campus Center)

Session 3B: *Regulatory* (101 Campus Center)

Poster Session 4:00pm - 6:00pm, Exhibit Area, First Floor, Campus Center

Social 4:30-6:00pm, Exhibit Area, First Floor Campus Center

Workshops (Evening 7:00-10:00 pm)

6) *State of the Science in Assessing MTBE Degradation II* (Campus Center Auditorium)

7) *Recent Improvements in the Practice of Risk Assessment as Illustrated through Case Studies* (101 Campus Center)

Wednesday, October 23, 2002

Platform Presentations

8:30am-Noon

Session 1: *Environmental Forensics I* (Campus Center Auditorium)

Session 2: *MGP Site Closure* (101 Campus Center)

Session 3: *Bioremediation* (168C Campus Center)

1:30pm-5:30pm

Session 1: *Sediments II* (Campus Center Auditorium)

Session 2: *Remediation- Soils* (101 Campus Center)

Session 3A: *Chemical Oxidation* (168C Campus Center)

Session 3B: *Training Range Residues* (168C Campus Center)

Session 4: *Biomarkers for Contamination: Hierarchical Approaches* (1109 Campus Center)

Poster Session 1:00-3:00pm, Exhibit Area, First Floor, Campus Center

Social 4:30-6:00pm Exhibit Area, First Floor, Campus Center

Workshops (Evening 7:00-10:00 pm)

8) *Forensic Environmental Geochemistry: Petroleum Fuels* (Campus Center Auditorium)

9) *MGP Site Closures: Experiences from the Trenches - Point Counter Point Technology Review* (168C Campus Center)

10) *Environmental Fate of Hydrocarbons in Soils and Groundwater* (101 Campus Center)

Thursday, October 24, 2002

Platform Presentations

8:30am-Noon

Session 1: *Environmental Forensics II* (Campus Center Auditorium)

Session 2: *Remediation- Groundwater* (101 Campus Center)

Session 3: *Arsenic* (168C Campus Center)

Session 4: *Site Assessment / Environmental Fate* (1109 Campus Center)

1:00pm-5:00pm

Session 1: *Sediments III* (Campus Center Auditorium)

Session 2: *Risk Assessment* (101 Campus Center)

EXHIBITS

Throughout the First Floor Concourse.

POSTER SESSION

Over 90 posters on display - Tuesday 4:00-6:00 pm and Wednesday, 1:00-3:00 pm, in back of Exhibit Area

SOCIALS (CASH BAR)

Tuesday and Wednesday - 4:30-6:00 pm - Exhibit Rooms - interact with poster presenters, exhibitors and other conferees

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Denise Leonard

Environmental Health and Sciences, N344 Morrill University of Massachusetts, Amherst, MA 01003

Phone: (413) 545-1239

FAX: (413) 545-4692

Email:

dleonard@schoolph.umass.edu

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