



GROUNDWATER RESOURCES ASSOCIATION
O F C A L I F O R N I A

“DNAPL 2: Source Zone Characterization and Remediation”

November 14-15, 2007 – Westin Hotel, Long Beach, CA

PROGRAM AGENDA

(as of 11/7/07)

Day 1 – Wednesday, November 14, 2007

- 12:00–5:00 pm Registration
- 1:00–1:10 pm ***Welcome and Opening Remarks***
 Bettina Longino, Geomatrix Consultants, Inc., Symposium Co-Chair
- 1:10–1:55 pm **State of the Practice**
 Michael Kavanaugh, Malcolm Pirnie, Inc.
- General Session 1: DNAPL Source Zone Characterization**
Moderator: Yash (John) Nyznk, CDM
- 2:00-2:30 pm *Evolution of our Understanding of DNAPL Source Zones*
 Jason Gerhard, The University of Western Ontario (invited)
- 2:30-3:00 pm *The DNAPL is in the Details: High Resolution Source Area
Characterization*
 Seth Pitkin, Stone Environmental (invited)
- 3:00-3:20 pm *Using MIP Profiles to Assess the Subsurface Distribution of VOCs at
DNAPL Sites*
 Peter Bennett, Geomatrix Consultants, Inc.
- 3:20–3:40 pm Break in Exhibit Area**
- 3:40-4:10 pm *Quantifying Uncertainty in DNAPL Source Zone Mass Estimates*
 Gary Wealthall, British Geological Survey (invited)

- 4:10-4:30 pm *Modeling and Experimental Studies for DNAPL Source Zone Characterization by the Fusion of Hydraulic and Tracer Tomography Tests*
Walter Illman, University of Iowa/University of Waterloo
- 4:30-4:50 pm *Mass Flux Distribution Using the High-Resolution Piezocone and GMS*
Mark Kram, U.S. Navy
- 4:50-5:10 pm Questions and Discussion
- 5:10–6:30 pm Reception and Poster Presentations – Exhibit Hall**
- 6:30-7:30 pm Dinner and Announcements (in conjunction with Branch Meeting)
- 7:30-8:15 pm Keynote Presentation: Sustainable Remediation**
David Ellis, DuPont and Paul Hadley, California
Department of Toxic Substances Control
- 8:15-8:30 pm Questions and Discussion

Day 2 - Thursday, November 15, 2007

7:30–10:00 am Registration

General Session 2: DNAPL Site Remediation

Moderators: Kent Glover, ARCADIS and Sarah Raker, MACTEC Engineering & Consulting

- 8:30-9:00 am *Development of a Protocol and Screening Tool for Selection of DNAPL Remediation Technologies*
David Major, Geosyntec Consultants, Inc. (invited)
- 9:00-9:20 am *Innovative Treatment of Dense Non-Aqueous Phase Liquids Using Surfactant-Enhanced In-Situ Chemical Oxidation (S-ISCO®)*
Catherine Miceli, VeruTEK
- 9:20-9:40 am *Case Study: Pilot Test of Hydraulic Displacement for Reducing Pooled DNAPL Mass, Superfund Site, Southern California*
Danielle Ondic, Hargis + Associates, Inc.
- 9:40-10:00 am Questions and Discussion

10:00–10:30 am Break and Poster Session – Exhibit Hall

General Session 2: DNAPL Site Remediation (Continued)

Moderators: Kent Glover, ARCADIS and Sarah Raker, MACTEC Engineering & Consulting

- 10:30-11:00 am *Mobilization of DNAPL During Subsurface Heating*
Gorm Heron, TerraTherm, Inc. (invited)
- 11:00-11:20 am *Recent Advances in the Application of In-Situ Electrical Resistance Heating*
Gregory Smith, Thermal Remediation Services
- 11:20-11:40 am *Electrical Resistance Heating for DNAPL Removal at Three Plumes*
David Cacciatore, Shaw Environmental & Infrastructure, Inc.
- 11:40-12:00 pm Questions and Discussion

12:00 – 1:15 pm Lunch

General Session 3: Complex Sites

Moderator: Dennis Maslonkowski, TRC Solutions

- 1:15-1:45 pm *Best Practices Manual for Managing and Investigating Coal Tar DNAPL in Bedrock*
Andrew Coleman, Electric Power Research Institute (invited)
- 1:45-2:05 pm *Use of Thermal Conduction Heating for the Remediation of DNAPL in Fractured Bedrock*
John LaChance, TerraTherm Inc.
- 2:05-2:25 pm *Pilot-Scale Demonstration of Bioaugmentation for TCE DNAPL Remediation in Fractured Bedrock*
Mary DeFlaun, Geosyntec Consultants, Inc.
- 2:25-2:45 pm *Permanganate Remediation of Chlorinated Ethenes in Fractured Shale: Source Zone Characterization and Full-Scale Remediation*
Rula Deeb, Malcolm Pirnie, Inc.
- 2:45-3:00 pm Questions and Discussion

3:00 – 3:30 pm Break – Exhibit Hall

General Session 4: Long Term Site Considerations

Moderator: Jennifer Nyman, Malcolm Pirnie, Inc.

- 3:30-4:00 pm *Flux-Based Site Assessment and Long-Term Management*
Suresh Rao, Purdue University (invited)

- 4:00-4:20 pm *Reductions in Contaminant Mass Discharge Following Partial Mass Removal from DNAPL Source Zones*
Eric Suchomel, Geosyntec Consultants, Inc.
- 4:20-4:50 pm *The Connection Between DNAPL Remediation and Sustainability*
Scott Warner, Geomatrix Consultants, Inc.
- 4:50 pm** **Closing Remarks**
Bettina Longino and Sarah Raker, Symposium Co-Chairs

Poster Presentations

Activated Sodium Persulfate Remediation of DNAPL Methylene Chloride in a Tight Formation

Isaac Aboulafina, MEC^X, LLC SDVOSB

Using Emulsified Oil Substrate (EOS®) for In Situ Bioremediation of a TCE Source Area in the Piedmont of North Carolina

Gary Birk, EOS Remediation, Inc.

Multilevel Sampling for DNAPL Presence in Traditional Monitoring Wells: A Mixing-Limited, Passive Sampling Approach

Sanford Britt, ProHydro, Inc.

DNAPL Characterization and Removal with Electrical Resistance Heating and Bioremediation

Vincent Chan, David Cacciatore, Dan Leigh, and Mike Yurovsky, Shaw Environmental, Inc.; and Scott Anderson, U.S. Navy

Time-Continuous Analysis of Mass Flux Reduction as a Function of Source Zone Mass Removal at Two Field Sites

Erica DiFilippo, University of Arizona

Real-Time, Three-Dimensional Tracer Test Data for Aquifer Characterization

Jay Jones, Environmental Navigation Services

Sustainable Remediation via Off-Gas Treatment Technology at Sites with "High Concentration" Recalcitrant Compounds and DNAPL

Lowell Kessel and Carol Winell, G.E.O. Inc. Remediation

Combined Thermal and Iron Powder In-Situ Soil Mixing Remediation of a Chlorinated DNAPL Source

Phil La Mori and Elgin Kirkland, FECC

Site Characterization and Assessment of Natural Attenuation Using Compound-Specific Stable Carbon Isotope Analysis in a Fractured Aquifer Contaminated with Dense Non Aqueous Phase Liquids (DNAPLs) in Catalonia, Spain

Massimo Marchesi, Jordi Palau Capdevila, Albert Soleri Gil, Universitat de Barcelona, and Ramon Arvena, University of Waterloo

Role of the NAPL Thermal Properties in the Effectiveness of Hot Water Flooding

Denis O'Carroll, The University of Western Ontario, and Brent Sleep, University of Toronto

Cost Effective DNAPL Remediation Case Study Contaminated Soils and Groundwater at Refinery Site Montreal, Canada Using Ivey-sol® Surfactant Technology

John Sankey, True Blue Technologies, Inc.

Understanding DNAPL Distribution in Subsurface Essential to Successful Implementation of In-Situ Thermal Treatment – A Case Study

Charles So and John Sciacca, Shaw Environmental & Infrastructure, Inc.

Field Screening Methods for the Presence of DNAPL, Superfund Site, Southern California

Gregory Waggle, Robert Niemeyer, Michael Palmer, Hargis + Associates, Inc.