

Draft Symposium Synopsis  
**Arsenic-Bearing Water Treatment Residuals: Assessing the Threat**

Tucson, Arizona  
February 13-14, 2006

### **Overview**

The workshop objective is integration of the most current scientific understanding of arsenic-bearing residuals' (ABR) behavior with the most appropriate modeling capabilities to assess the potential threat posed by ABR. The workshop will evaluate the science, research, and model issues involved in assessing the threat posed by current generation and disposal practices for ABR.

The symposium theme is limited to arsenic-bearing residuals (ABR) generated by water treatment processes, but will include insights into predicted arsenic behavior gained from a broad range of arsenic cycling and landfill process studies. Attendance will be limited to approximately 50, invited participants representing the National Institute of Environmental Health Science (NIEHS), the Environmental Protection Agency (EPA), state environmental quality agencies, academics, and selected additional experts in the field. Day One will include five sessions in which invited speakers will discuss key ABR issues with time allotted for questions and discussion after each speaker. Day One will conclude with a panel-led, open discussion of how to integrate the information and expertise into an overall assessment of the future potential threat posed by ABR, if managed by current methods. Day Two will be a closed planning meeting involving a smaller group (approximately 20 participants) from NIEHS, EPA and academia with the purpose of defining and putting into action the next steps needed to assess the potential health impact of ABR.

### **Agenda**

#### **Day One** (Monday, February 13)

##### **Session I.** Welcome and Introduction

[8:20-9:15am]

- a. Welcome [J. Gandolfi, – 5min]
- c. Public health research and environmental programs collaboration [W. Suk, B. Anderson, T. Erickson, L. Hoffman – 25min]
- c. Problem statement and workshop goals [W. Ela - 20min]

**Session II. Arsenic-Bearing Residuals: Characteristics, Concentrations and Current Management** [9:15-10:15am; E. Sáez, Moderator]

- a. Review of types of residuals generated and the predicted mass flux and arsenic loading of the residual streams [T. Sorg, M. Siegel, E. Sáez – 20min]
- b. Regulation of disposal of ABR [G. Helms, J. Kempec – 20min]
- c. Observed and predicted disposal and management strategies for ABR [S. Kommineni, B. Mcler, C. Ryan – 20min]

**Session III. Arsenic-Bearing Residuals: Science Issues and Questions** [10:30-11:30; W. Ela, Moderator]

- a. Tests and appropriate metrics for estimating behavior and risks of ABR [D. Dzombak, T. Townsend, E. Sáez, J. Burgess, S. Jones – 20min]
- b. Information resources on U.S. landfills and landfill leachate [G. Helms, T. Townsend, J. Washington, ASTSWMO or SWANA representative – 20min]
- c. Concerns with ABR and ABR as representative recalcitrant contaminant [W. Ela – 20min]

**Lunch** [11:30am-1:00pm]

**Session IV. Arsenic Transformations and Transport** [1:00-2:15pm; G. Laniak, Moderator]

- a. Geochemistry of arsenic [J. Washington, J. Hering, P. O'Day – 25min]
- b. Biological transformations of arsenic [R. Oremland, J. Field – 25min]
- c. Paths after the landfill [T. Townsend, K. Gardner, W. Ela – 25min]

**Session V. Insights from Existing Landfills and Models** [2:30-4:10pm; J. Hamilton, Moderator]

- a. Studies of Abandoned and Active Landfills [S. Chilrud, J. Simpson, C. Renshaw, T. Townsend – 35min]
- b. Model case studies [J. Babendreier, G. Laniak – 30min]
- c. Fate and transport models: capabilities, limitations and needs [G. Laniak, Z. Saleem, S. Chilrud, C. Renshaw – 35min]

**Session VI. Panel Discussion: Toward an Integrated Assessment of the Potential Threat from ABR** [4:10-5:15pm; L. Reed, Moderator; Possible Panelists: Dzombak, Helms, Graziano, Laniak, Ela, Al-Abed, Chilrud, Mcler, Townsend, Ryan]

- a. Model input: source term quantification, influence of other arsenic sources, estimating downstream paths and receptors
- b. Definition of appropriate criteria and acceptable uncertainty
- c. Strategies to address shortcomings and fill knowledge gaps
  
- d. Summary of Day One [L. Reed]

**Dinner**

[6:30pm; Hosted by University of Arizona, SBRP]

**Day Two** (Tuesday, February 14)

**Session VII.** Open Discussion: Conceptual Next Steps in Assessing ABR Impact (if money and time were not objects) [8:00-9:15am; G. Laniak, W. Ela, Moderators]

**Session VIII.** Open Discussion: Pragmatic Next Steps in Assessing ABR Impact [9:30-10:45am; L. Reed, G. Helms, Moderators]

- a. Prioritizing and supporting follow-on work
- b. Expectations for achievable levels of certainty
- c. Timelines for outcomes

**Session IX.** Open Discussion: Reporting Progress and Dissemination of Findings [11:00am-12:00pm; L. Whitson, J. Kempec, T. Sorg, Moderators]

- a. What?
- b. How?
- c. When?