# ITRC METHODOLOGY STATUS REPORT

# POST-IMPLEMENTATION

***Enhanced Attenuation: Chlorinated Organics***
***EACO Team***
***June 2010***
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## METHODOLOGY STATUS

### Status of the Methodology

Enhanced attenuation (EA) of chlorinated organics is a plume-remediation strategy intended to help achieve groundwater restoration goals in a systematic manner that will save time and money. EA provides a bridge between source zone treatment and monitored natural attenuation (MNA) and/or between MNA and more aggressive methods. EA is an intuitive approach to transition remedial projects toward low-energy technologies and ultimately MNA. Mass loading and the attenuation capacity of the aquifer are being recognized as important factors in the selection of remedial enhancements. These factors are being considered even during the characterization phase of a contaminated site.

### Evolution of the Methodology

During the two years since ITRC implementation began, the EACO Team Leader has observed that this strategic approach to moving a site through the remediation phase is being used as a common practice to determine when site conditions and contaminant distribution warrant less aggressive treatment. In most instances, it is not referred to as EA but has become a logical approach to site remediation.

Since the fall of 2005 team members have described the use and usefulness of the guidance at the following:

- AFCEE Project Management Review, 2005
- Florida Department of Environmental Protection, Bureau of Waste Cleanup Workshop, spring 2007, platform presentation
- Florida Remediation Conference, fall 2007, platform presentation
- Strategic Environmental Research and Development Program (Washington, D.C.), December 2007, poster presentations
- State Coalition for the Remediation of Drycleaners (New Orleans, La.), spring 2008, presentation
- Savannah River National Laboratory, Aiken, S.C., April 2008, short course (8 hours)

- Environmental Protection Agency (EPA) Region 4, Natural and Enhanced Attenuation for Chlorinated Organics: New Developments and Tools, April 2008, presentation
- Battelle Conference (Monterey, Calif.), May 2008, short course
- Battelle Conference (Monterey, Calif.), May 2008, platform presentation
- Strategic Environmental Research and Development Program (Washington, D.C.), December 2008, poster presentations
- Battelle, May 2009, short course
- EPA Region 8, June 2009, short course
- Langan Engineering, June 2009, presentation
- Strategic Environmental Research and Development Program (Washington, D.C.), December 2009, poster presentations
- Association of Environmental Health & Sciences Conference, March 2010, platform presentation
- Battelle Conference, May 2010, short course (along with BioDNAPL and Mass Flux)

There have been 1670 participants in the Internet-based training sessions, including 431 state employees, 57 EPA employees, 31 Department of Defense employees, 19 Department of Energy employees, employees of other federal agencies, consultants, site owners, technology vendors, members of academia, and private citizens representing communities as stakeholders. The technical feedback from these courses has been positive and encouraging for the use of less aggressive and sustainable technologies to treat subsurface chlorinated organic contamination.

## ITRC GUIDANCE STATUS

### Condition of the Guidance

The guidance document continues to be valid and useful, and it is being used. Since EA is an approach, it is not dependent on any one engineered remedial system. Therefore, the strategy outlined in the EACO guidance still offers valuable direction in choosing a solid and sustainable remedial approach for sites with subsurface contamination.

### Recommendation

The guidance is still valid, should remain on the ITRC site, and should continue to be promoted.