




Contaminated Groundwater Characterization & Monitoring

EPA
United States
Environmental Protection
Agency

Instructor Introductions

- **Ed Gilbert, U.S. Environmental Protection Agency**
  - B.S. in Earth Science; M.S. in Geological Sciences
  - Certified Professional Geologist
  - 20 years in environmental characterization & remediation
    - 3 years U.S. EPA On Scene Coordinator (Oil Spill & Chemical Release Emergency Response)
    - 8 years U.S. EPA Environmental Response Team (Contaminant Hydrogeologist)
    - With U.S. EPA OSRTI's Technology Innovation and Field Services Division since 2011; Technology Assessment Branch
  - Focus on innovative remedial technologies, site characterization, Conceptual Site Models (CSM), and soil/groundwater sampling strategies

Instructor Introductions

- **Greg Gervais, U.S. Environmental Protection Agency**
  - B.S. in Chemical Engineering
  - Licensed Professional Engineer (Environmental)
  - 20 years in environmental characterization, remediation, project management and program management and evaluation
    - 6 years Chemical/Environmental Engineer and Project Manager, U.S. Army Corps of Engineers (Hazardous, Toxic and Radioactive Waste Sites Remediation)
    - 7 years Deputy Program Manager and Environmental Engineer, NOAA (soil and groundwater investigations, remedial design, remedial action, and regulatory compliance)
    - 2 years Program Evaluator, NOAA (coastal zone management programs)
    - With U.S. EPA OSRTI's Technology Innovation and Field Services Division since 2011; Manager of Technology Assessment Branch
  - Focus on innovative characterization and remedial technologies, site characterization, multiagency collaborations and research partnerships

Goals of the Course

- Discuss the difference groundwater characterization and groundwater monitoring
- Discuss the need for high resolution characterization
- Provide the contaminant hydrogeology context
- Review strategies, methods and tools for contaminated groundwater characterization & groundwater monitoring

Groundwater Characterization or Monitoring?

- **Contaminated Groundwater Characterization**
  - Objectives
  - Tools
  - Approaches

- **Contaminated Groundwater Monitoring**
  - Objectives
  - Tools
  - Approaches

Course Overview

- **Background and implementation of high resolution groundwater characterization**
- **Impacts of subsurface heterogeneity on groundwater flow and contamination distribution**
- **Scale appropriate groundwater sampling**
- **Applicable tools for high resolution characterization:**
  - » Soil
  - » Hydrostratigraphy
  - » Qualitative/quantitative contaminant distribution
- **Multilevel groundwater sampling systems**
- **Data Use, Management, and Visualization**
- **Tidal Influence**
  - » NAPL
  - » Aqueous Phase
- **Groundwater Sampling & Monitoring**
  - » Remediation Monitoring Phase
  - » Attainment Monitoring Phase

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Questions?