


U.S. Geological Survey



***U.S. Geological
Survey Capabilities and
Directions in Research and
Application of New and
Innovative Remediation
Technologies***

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U.S. Department of the Interior
U.S. Geological Survey

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Capabilities and Directions

- Basic and applied science to support remediation decisions
 - Labs, field studies, modeling, mapping, geo-computation
- Energy and Minerals Mission Area
 - Abandoned and legacy mines
 - Wastes from energy and mineral production
 - Mine wastes as potential critical mineral resources
- Environmental Health Integrated Science Teams
 - PFAS, energy and minerals life cycles, drinking water and wastewater
- Water Mission Area
 - National Water Quality Lab & Water Quality Processes Program
- North Atlantic and Appalachian Region (NAAR)
 - PFAS Capability Team; Artificial Intelligence/Machine Learning (AI/ML) Group
- USGS Karst and Unsaturated Zone interest groups
- Ecosystems
 - Information on key hydrogeologic and biogeochemical processes



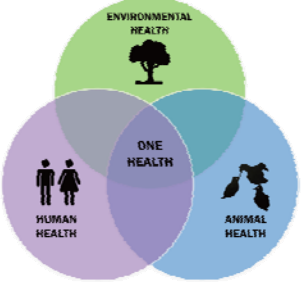
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Advancing Promising Remediation Research & Applying New Technologies

- Site specific, regional and national approaches
 - Access to complex sites for research and methods development
 - Source-to-receptor approach
 - Advanced remote sensing, machine learning, drones
- Evolving methods to address new challenges
 - Integrated climate, topographic, geologic, geochemical, geophysical, hydrologic and ecological models of watersheds
 - One Health Concept
 - Adoption of advanced geophysical site characterization and monitoring technologies

One Health is at the intersection of human health, animal health, and environmental health.



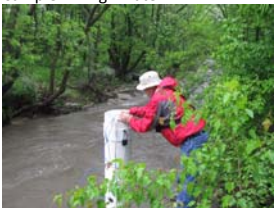
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Our Vision for the Future of FRTR

Installing a micro water-quality sampler in high water



(Credit: Barbara Mahler, USGS. Public domain.)

- Help us understand where USGS science can be prioritized
- Exchange information, data and methods to deal with difficult to remediate sites
- Facilitating access to study / pilot sites
- Raising awareness of agencies' science needs and opportunities for partnerships
- Foster the idea of *preventing* contamination before it occurs

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Thank you!

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