

Implementing Adaptive Management at Contaminated Sediment Sites

Moderator

Betsy Henry, Ph.D. (Anchor QEA, LLC)

Panelists

Doug Tomchuk (U.S. EPA)

Karl Gustavson, Ph.D. (U.S. EPA)

Katherine Garufi, PE (HDR, Inc.)

Peter Brussock, Ph.D. (The ELM Group)

Robert Wyatt (Northwest Natural)

ADAPTIVE MANAGEMENT

A formal, science-based approach to risk management that permits implementation of actions despite uncertainties. Knowledge gained from monitoring and evaluating results is used to adjust and direct future decisions.

USACE (2019). ERDC/EL S R-19-9

-- Commonly recommended to address management problems that have high uncertainty.



General AM Process

- 1) Identification of a goal
- 2) Action(s) to make significant progress toward that goal
- 3) Monitoring of progress toward the goal
- 4) Use of monitoring information to guide decisions regarding additional actions to achieve the goal



USEPA Superfund Task Force 2018

Adaptive management is a formal and systematic site or project management approach centered on rigorous site planning and a firm understanding of site conditions and uncertainties. This technique, rooted in the sound use of science and technology, encourages continuous re-evaluation and management prioritization of site activities to account for new information and changing site conditions. A structured and continuous planning, implementation and assessment process allows EPA, states, other federal agencies, or responsible parties to target management and resource decisions with the goal of incrementally reducing site uncertainties while supporting continued site progress."

USEPA Framework June 2022

Adaptive site management is described as a formalized process to manage risks from contaminated sediment sites where iterations of remediation, monitoring, and progress evaluations are guided by a formalized adaptive management plan that establishes the goals of the project, sets expectations, uses monitoring data to evaluate progress towards those expectations, and adapts the remedy as necessary based on those evaluations (page 3)



What is the biggest challenge with implementing adaptive management?

- Lack of closure
- Stakeholder/agency agreement
- Quantitative remediation goals
- Administration and documentation
- Uncertainty with ultimate project costs



What is the biggest opportunity with implementing adaptive management?

- Improve remedy effectiveness
- Accelerate progress toward risk reduction
- More time to refine site understanding
- Upfront stakeholder engagement
- Potential cost-savings (or staggering of capital costs)



What are your suggestions for moving forward?