LSP Association
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Novel Approaches for Evaluating and Remediating Contaminated Sediments

Course Syllabus

PART 1:
MAKING MORE ACCURATE RISK-BASED DECISIONS FOR CONTAMINATED SEDIMENT SITES

Part I will begin with introduction to the process and importance of making accurate (site-specific) decisions for addressing the risk at contaminated sediment sites. The course will then discuss the concept of bioavailability and how the use of bioavailability-based preliminary remediation goals can result in a more targeted, cost- and time-effective management plan by responsible parties for reducing risk. We will also introduce the technical concept of passive samplers, which are the most convenient tools for measuring the bioavailability of contaminants, followed by case studies to show the use of passive samplers for refining the preliminary remediation goals and reducing the extent of remediation at contaminated sediment sites. Other benefits of passive samplers, such as monitoring the efficacy of treatment and measuring amount/direction of contaminants' flux, will also be discussed.

- Introduction and Background
- Determining Remedial (Clean-up) Goals
- Refining Preliminary Remedial Goals (PRGs) Based on Bioavailability
- Passive Samplers
- Case Studies (I)
    - Case Study 1- Sediment vs. Bioavailability based-PRGs
    - Case Study 2- Refining Remedial Decisions Based on Bioavailability
- Other Benefits of Passive Samplers
    - Monitoring the Efficacy of Treatment
    - Measuring Amount/Direction of Contaminants' Flux
- Case Studies (II)
    - Case Study 3- Monitoring the Efficacy of Treatment
    - Case Study 4- Measuring Amount/Direction of Contaminants' Flux
- Q&A

BREAK (30 minutes)

PART 2:
USING IN-SITU TECHNOLOGY FOR REMEDIATING SEDIMENTS CONTAMINATED WITH PCBS, PAHS, DIOXINS, PESTICIDES, AND METALS

Part 2 of the course will describe advancements in in-situ remedial technologies that are linked in part to manipulating the bioavailability of the chemicals as well as in-situ degradation of chemicals. The in-situ sediment remediation technology is based mainly on fine particle sized activated carbon (AC) but can be extended to include other amendments such as organoclay. The principles of the

approach, ranges of costs, performance, limitations, and case studies will be presented. The ITRC framework will be used to illustrate when and how to utilize AC treatment as well as other in-situ remedial technologies.

- Introduction
- Development of Technology
- Treatability and Pilot Studies
- Case Studies
  - Mirror Lake
  - Long-term performance study
- Regulatory Framework
- Q&A