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- In first session (Chemical/Biological approaches) we looked at some emerging technologies for treating contaminated sediments

Issues to address:

understanding the mechanisms underlying the technologies

issues for moving the technology from lab to field.

R&D work is a critical step to understand mechanism of technology in order to increase the chances for success in the field-



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How do you decide when to go to field/ when is a technology ready for the field

Treatment efficiencies may be limited to the available (bio) fraction

How do you deliver treatment to sediments

Emplacement/Containment issues



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Couple (Chem & Bio) technologies with sequestration and or capping technologies (need to bring groups together)
e.g: reactive caps with ZVI, enhanced biological activity under a cap etc

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In the 2nd session we looked at technology which have been implemented in the field and the difficulties around evaluating effectiveness

- ❖ heterogeneity at a site
- ❖ comparison to a reference or control site
- ❖ analytical variability: reproducibility of replicate sample have such variability (SD) that evaluation of technology effectiveness may be problematic (PAH/Hg measurements)
- ❖ it helps if before hand you developed a robust approach for evaluating effectiveness of a technology

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- ❖ ∅ Question as to whether risk-based goals can be attained using ZVI
- ❖ ∅ Possible application of sorbent material with ZVI ? PCBs desorbing from sediment will be sorbed (unavailable biologically) by the sorbent material.
- ❖ ∅ Possibly use natural fauna (bioturbation by oligochaetes) for mixing of reagents or sorbents using application rates corresponding to mixing rates..
- ❖ ∅ Consider the effects of H₂ introduction on increasing competing bacterial populations
- ❖ ∅

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- ❖ Design and Delivery
- ❖ ∅ Design dependent upon targeted depth of treatment
- ❖ ∅ Capping and then H₂ injection may be an approach to mitigate
- ❖ suspension of sediments into water column.
- ❖ ∅ What is the effect of injection of dissolved H₂ on the sediment beds? will lifting occur?
- ❖ ∅ Delivery in consolidated sediments may be difficult

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- ❖ ∅ Ideal Site for H2 enhanced and ZVI pilot testing
- ❖ High concentration of COCs
- ❖ Cohesive sediments
- ❖ Shallow water
- ❖ Low energy, depositional areas
- ❖ Low energy depositional environment

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