Lessons Learned from EPA-Sponsored Optimization Reviews

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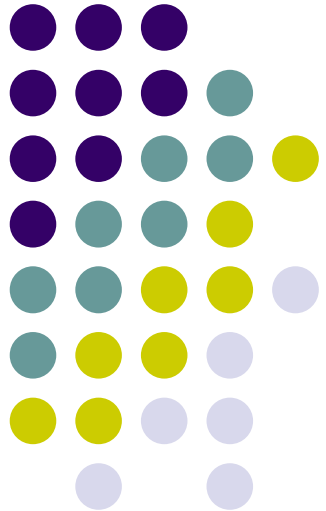


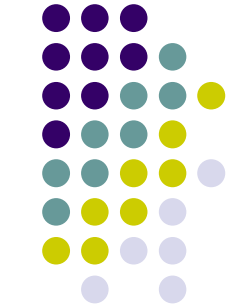
http://www.cluin.org/optimization/

http://www.epa.gov/superfund/action/postconstruction/optimize.htm

Presentation Outline

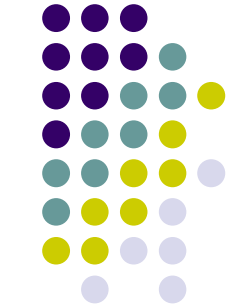
- Brief history of EPA optimization pilot
- Common recommendations & progress with implementation
- Lessons learned & obstacles identified during implementation of recommendations
- Stakeholder feedback
- EPA's "Action Plan for Ground Water Remedy Optimization"

Background on EPA Initiative



- EPA initiated pilot as part of Superfund Reforms in 2000
- Included a baseline data collection effort for all Fund-lead P&T systems (88 systems identified)
- Selected 20 Fund-lead P&T sites for pilot, based on cost and performance concerns
- Employed the Remediation System Evaluation (RSE) process developed by USACE
  - Site-specific recommendations on system effectiveness, cost savings, technical improvement and system closure
  - Not an audit, but an independent review of actual operating information not available during design

Common Recommendations



- Improve evaluation of capture zones & plume delineation
- Reduce monitoring, labor & oversight
- Simplify systems, or replace components with more efficient units/technologies
- Develop clear strategy for site closure, including possible changes to treatment method or overall remedy

- Early cost projections for initial 20 pilot sites:
  - $5.9 million in capital costs to implement changes
  - Potential net savings of $4.8 million/year

Implementation Progress

- Progress is monitored through detailed discussions with site managers on an annual basis
  - Status of each recommended system change
  - Associated cost savings and/or expenditures
  - Hurdles to implementation

- Current status of RSE recommendations:
  - 68% are complete or underway

Implementation Progress

- What types of recommendations are being implemented first?
  - Capture zone analysis and plume delineation
  - Maintenance, cleaning and repairs
  - Reductions in process monitoring
  - Changes in sampling plans that impact an existing well network
  - Improved O&M reports and data analysis

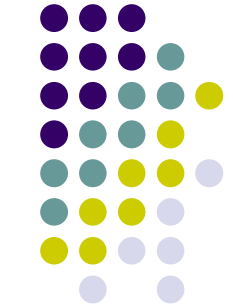
Lessons Learned & Hurdles

- Optimization benefits go well beyond protectiveness and cost savings for EPA
  - States ultimately benefit the most from reductions in annual costs
  - Potential drinking water sources are restored more quickly
- Reductions in project management and oversight costs are difficult to achieve
  - Labor reduction is particularly sensitive
  - Structure of existing contracts may prevent reductions in scope
  - On-site contractors may resist some system changes

Lessons Learned & Hurdles

- Various administrative hurdles exist
  - Renegotiating State Superfund Contracts (SSCs)
  - Revisions to scope or funding for existing O&M contracts
  - Renegotiating permits and discharge limits

Stakeholder Feedback



- EPA Regions
  - Independent, third-party reviews very valuable
  - Consistent approach to optimization will facilitate smooth transfer of sites to States for O&M
  - RSEs highlight the need for additional technical assistance
    - New tools to manage voluminous monitoring data
    - More attention to remedial design phase
    - More flexible contracting mechanisms
  - Estimated cost savings and expenditures provided in RSEs may be optimistic
  - Renegotiating discharge permits may set precedent

Stakeholder Feedback

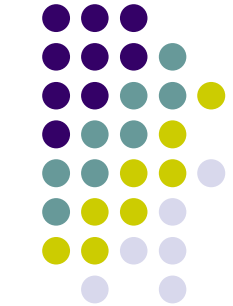
- States
  - Also enthusiastic about independent, third-party review
  - Optimization is an important step in the process of transferring O&M responsibility from EPA to States
  - RSEs need to be conducted early enough to allow ample time for system changes before transfer to States

- EPA Office of the Inspector General (March 2003)
  - Evaluation concluded that optimization is a valuable tool for identifying potential cost savings and system improvements
  - “Important and useful progress has been made in implementing recommendations.”
  - Focused, organized follow-up is needed to measure outcome

EPA's "Action Plan"

- Optimization is everyday business for Superfund!
- Sites prioritized according to annual operating costs, age of system, and concerns for protectiveness or efficiency
  - "RSE-lite" will help address a larger universe of sites
- Priority funding for implementation of recommendations
- Increased HQ oversight of implementation progress
- Continually assess needs for new technical guidance
- Close coordination with States throughout process
- Provide tools to PRPs for optimization

Available Resources



- "Elements for Effective Management of Operating Pump and Treat Systems"
  - OSWER 9355.4-27FS-A, EPA 542-R-02-009 (December 2002)
- "Pilot Project to Optimize Superfund-financed Pump and Treat Systems: Summary Report and Lessons Learned"
  - OSWER 9283.1-18, EPA 542-R-02-008a (November 2002)
- "Groundwater Pump and Treat Systems: Summary of Selected Cost and Performance Information at Superfund-financed Sites"
  - EPA 542-R-01-021a (December 2001)

On-line Resources

- http://www.cluin.org/optimization/
  - Relevant guidance and project updates
- http://www.epa.gov/superfund/action/postconstruction/optimize.htm
  - Relevant guidance and project updates, with links to additional post-construction topic areas
- http://www.cluin.org/rse/
  - To download site-specific RSE reports & recommendations
- http://www.environmental.usace.army.mil/library/guide/rsechk/rsechk.html
  - RSE checklists, scope of work & guide contract clause
- www.frtr.gov/optimization.htm
  - Optimization tools from various Federal agencies

Coming Soon!

- “Effective Contracting Strategies for O&M of P&T Systems”
- “Cost-Effective Design of P&T Systems”
- “O&M Report Template for Ground Water Remedies with Emphasis on P&T Systems”
- “Ground Water Remediation Optimization: Benefits and Approaches”
- “A Systematic Approach to Evaluation of Capture Zones at P&T Sites”