FIVE-YEAR REVIEW PROCESS
CAMP RAVENNA

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US Army Corps of Engineers
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Introduction

- Basis for doing five-year review (FYR)
- Components of a FYR
  - Community Involvement
  - Document Review
  - Site Visit
  - Interviews
  - Data Review
  - Assess Protectiveness
  - FYR Report
- Camp Ravenna FYR

Basis - CERCLA Process

- Preliminary Assessment/Site Inspection
- Remedial Investigation (RI)
- Feasibility Study (FS)
- Proposed Plan
- Record of Decision (ROD)
- Remedial Design/Remedial Action Completion Report
- Five-Year Review (FYR)

Statutory Requirement

- CERCLA § 121(c) requires review of remedial actions that result in any hazardous substances, pollutants, or contaminants remaining at the site no less often than every 5 years after the start of the remedial action
- Purpose is to assess protectiveness of the remedy

Requirements

- A FYR is required when a remedial action leaves the site in condition not suitable for UU/UE
- A FYR should not question selection of the remedy; it focuses on protectiveness of remedy
- Protectiveness determination hinges on the responses to Questions A, B, and C (simple but not always easy)
- The report should be written by an independent, objective team for the public

Technical Assessment Questions

Question A: Is the remedy functioning as intended by the decision documents?

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and RAOs used at the time of remedy selection still valid?

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

Frequency

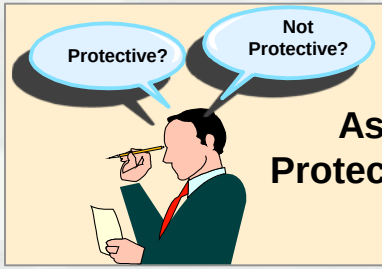
- At least every five years after start of remedial actions* or five years from signature date of previous FYR

* 2 JUN 2014 DERP Manual update: The initial trigger for the FYR is set based on "...the start of remedial action construction or the signature date of the ROD where construction is not required..."

Components of the Five-Year Review

Data Review

Community Involvement and Notification



Assess Protectiveness

Five-Year Review Report

Document Review

Interviews

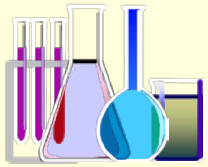
Site Visit

Community Involvement/Notification

- Public notice at start and on completion of FYR report
- Regulatory review of draft report is required by DoD policy
- Public review of draft report not required

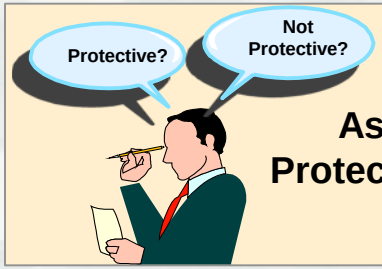
Five-Year Review Report

Data Review

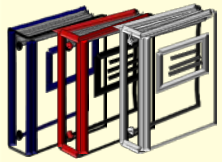


Community Involvement and Notification

Assess Protectiveness



Document Review



Interviews

Site Visit

Document Review

- Review CERCLA documents, construction completion, monitoring, and inspection reports
  - RI/FS; evaluate conceptual site model and nature/extent of contamination
  - ROD; evalute RAOs, contaminants, cleanup goals and their basis
  - Construction completion report; evaluate when the remedy was implemented and whether it was performed as intended
  - Monitoring and inspection reports; evaluate progress towards achieving the RAOs and whether LUCs are being adhered to

Risk Assessment Review

- Risk Assessment Review and Evaluation
  - Evaluate the effects of changes in standards and assumptions that were used at the time of remedy selection
  - Focus on ROD identified contaminants
  - Consider ecological risks and other factors (i.e. natural disasters)

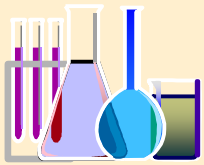
ARARs Review

- Primary source of ARARs is the ROD
- Identify any changes since the ROD
- Identify any standards or ARARs that have been promulgated since the ROD
- Determine if changes or new standards affect protectiveness of remedy

Land Use Controls Review

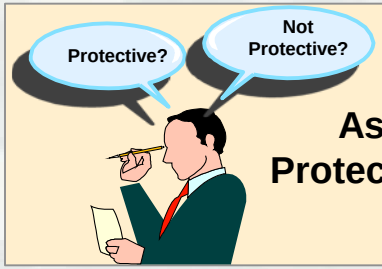
- Typical steps in reviewing LUCs:
  - Determine if LUCs have been fully implemented
  - Identify land use changes and LUC compliance issues during the site inspection
  - Assess effectiveness of LUCs (or lack of LUCs)
  - Determine if LUC status affects current and/or future protectiveness

Data Review



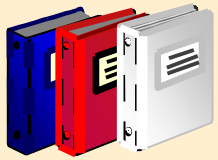
Community Involvement and Notification

Assess Protectiveness



Five-Year Review Report

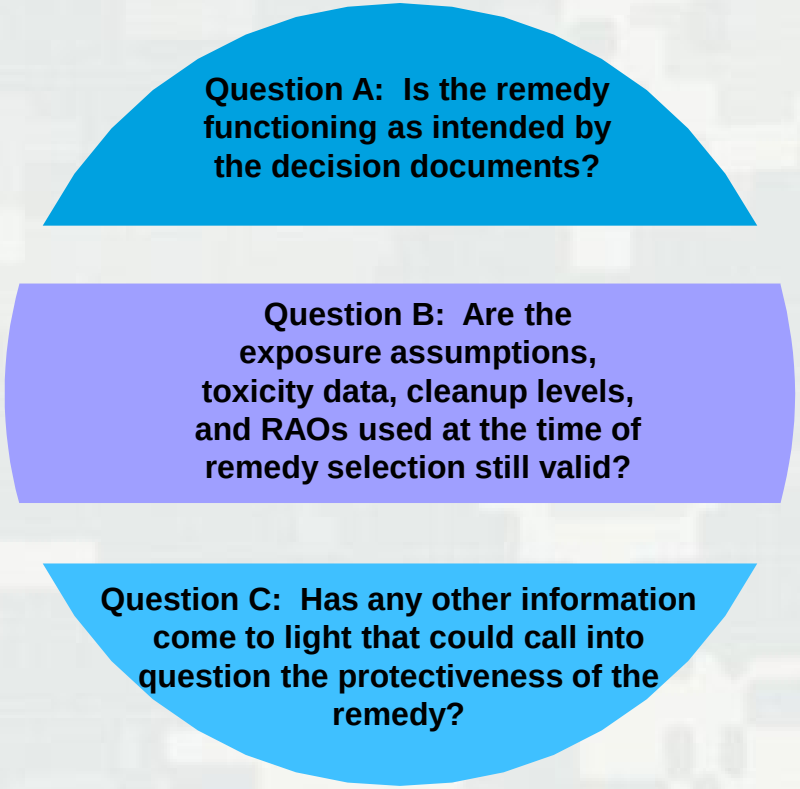
Document Review



Interviews

Site Visit

Site Inspection



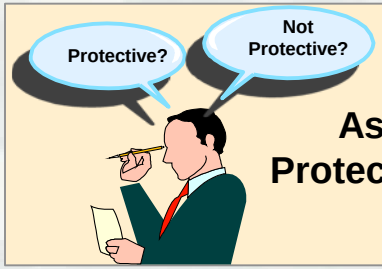
Site inspection plays into responses for all three questions

Site Inspection
Key Issues

- Coordination between installation, FYR team, and regulators is critical
- Observations during site inspection contribute to answers to Questions A, B and C
  - Presence and effectiveness of LUCs
  - Condition of treatment systems and monitoring network
  - Changes in land use
  - Identification of new receptors or exposure pathways
- Site visit is good opportunity to check the site repository

Data Review

Community Involvement and Notification



Assess Protectiveness

Five-Year Review Report

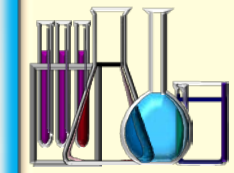
Document Review

Interviews

Site Visit

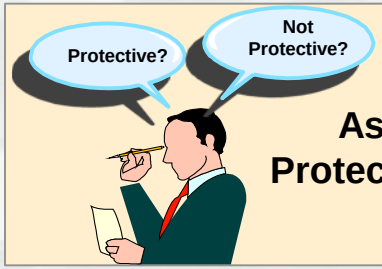
Interviews

- Regulators, local authorities, community, and site operators
  - In person, by phone, letter, or email
  - Best opportunity for face-to-face interviews is during site inspection



Data Review

Community Involvement and Notification



Assess Protectiveness

Five-Year Review Report

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Data Review

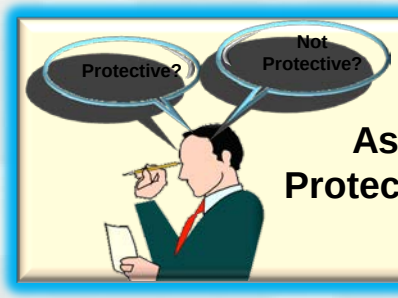
- Provide answers to Questions A and B, emphasis should be on RAOs and protectiveness
  - RAOs are the standards against which the remedy performance is judged
  - Data review and analysis should be objective and should not parrot findings of others

Data Review - Key Issues

- Problems may result from poor RAOs in ROD
- Format and availability of data affects the analysis
- Emphasis is on most recent five years
- Quantitative trend analysis is preferred
- Optimization may be considered but focus is on protectiveness

Data Review

Community Involvement and Notification



Assess Protectiveness

Five-Year Review Report

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Assessing Protectiveness Question A

Is the remedy functioning as intended by the RODs?

Consider…

- If performance standards are being met
- If remedy can achieve cleanup goals
- If there are problems with the remedy
- If LUCs are in place
- If operating procedures will maintain the effectiveness of response actions

Assessing Protectiveness Question B

Are the exposure assumptions, toxicity data, cleanup levels and RAOs used at the time of remedy selection still valid?

Consider…

- Changes in factors such as land use, new receptors, exposure pathways, new contaminants, etc.
- Unanticipated toxic byproducts
- Changes in physical site conditions
- Changes in ARARs and newly promulgated standards
- Toxicity factors or characteristics of the contaminants

Assessing Protectiveness
Question C

Has any other information come to light that could call into question the protectiveness of the remedy?

Consider…

- Ecological risks
- Natural events or disasters
- Other issues not covered in questions A and B
- New studies, such as an ecological screening, may be necessary to make a finding of protectiveness

Assessing Protectiveness

- Answer Questions A, B and C
- If answer is Yes, Yes, No…
  - ► Remedy is protective
- If answer is not Yes, Yes, No…
  - ► Remedy is protective in the short-term, or
  - ► Remedy is not protective, or
  - ► Protectiveness cannot be determined until further information is obtained (known as deferring protectiveness)

Recommendations

- Develop recommendations and follow-up actions for each issue
- For each recommendation, identify:
  - Party responsible for implementation
  - Agency with oversight authority
  - Schedule for completion or implementation

Guidance and Links

http://www.epa.gov/superfund/fiveyearreview/

- Everything you could ever want to know about FYRs from USEPA's perspective
  - 2001 comprehensive guidance, policy and guidance updates and clarifications, fact sheets, frequently asked questions

Camp Ravenna
Second Five-Year Review

- 84 areas of concern (AOCs) at Camp Ravenna
- 7 AOCs qualify for the five-year review (i.e. remedial action started and UU/UE not attained)
  - Load Lines 1, 2, 3, and 4
  - Load Line 12
  - Ramsdell Quarry Landfill
  - Winklepeck Burning Grounds

Load Lines 1 - 4

- Interim ROD (2007)
  - Soil excavation and off-site disposal
  - Building slab maintenance
  - Groundwater evaluation
- Remedial action (2007)
- Post-ROD activities
  - Building slab removal
  - Soil excavation and off-site disposal
  - Sampling and analysis, risk assessment

Load Line 12

- ROD (2009)
- Remedial action 2010
  - Sediment excavation and off-site disposal
- Post-ROD activities
  - Sampling and analysis, risk assessment

Winklepeck Burning Grounds

- ROD (2008)
  - ▶ Soil excavation and off-site disposal
- Remedial action (2008 – 2009)
- Explanation of Significant Differences (2015)
- Remedial action (ongoing)
  - ▶ Soil excavation and off-site disposal

Ramsdell Quarry Landfill

- ROD (2009)
- Remedial Action (2010)
  - Soil Excavation and off-site disposal
- ROD Amendment (2014)
- Remedial Action (2014)
  - Perimeter fence and land use controls

Current Status of the FYR

- Site Inspection, interviews, data review complete
- Internal report review ongoing
- Ohio EPA review/comment required
- Final five-year review report due date August 31, 2017

Questions?