EPA Region 6
Corrective Action Strategy

Risk-Based / Performance-Based
Facility Lead Cleanups

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Accelerating Site Closeout — Improving Performance — & Reducing Costs Through OPTIMIZATION

What we will discuss today

- Results-Based Approach to Cleanup
  (tools to consider)

- Remington Arms Case Study – Corrective Action Start to Finish in Under 3 Years
  (what made it work)

Cleanup Decision Points

It's the same for every site: making good policy calls

- **Land use** (realistic current and future use)
- **Groundwater use** (classification, cleanup, or movement and exposure protection)
- **Investigation endpoints**
- **Risk endpoints**
  - **Level of protection** (10^{-4} – 10^{-6}, industrial, residential..)
  - **POC or POE**
- **Managing risk** (options, removal, treatment, engineering, institutional controls)

R6 Corrective Action Strategy What is it?

A Risk Management – Performance-Based Approach to Site Investigation and Cleanups

- Facility-wide evaluations
- Encompasses all aspects of the CA process (investigation to remedy performance)
- Process that is transportable to States, other Regions and Regulatory Agencies

Corrective Action Strategy

- Framework strategy that promotes site-specific activities:
  - Administrative flexibility
  - Realistic evaluation of current and future land use and ground water resource use (CSM)
  - Purpose driven investigation (DQOs)
  - Risk-based decision making
  - Prioritization and focus on worst first
  - Remedial selection based on ability to achieve performance standards

Implementation

- Using Letter Agreements - swapping out CA module with CAS in Permit or Order!
- Suspend that portion of the permit or order and memorialize in Letter of Agreement between Administrative Authority and Facility
  - Modify permit or order at remedy completion
  - Place in permit at renewal

Key Elements / Steps

1. Conduct scoping meeting
2. Identify and fill data gaps (DQOs)
3. Conduct HH and Eco screening
4. Risk management / cleanup
5. Performance monitoring

RFA, RFI, CMS, CMI… not a part of the CAS process

Scoping Meeting

Let's agree on the cleanup goals at the beginning of the process

- Facility proposes performance standards
- Conceptual Site Model (CSM)
- Establishes DQOs
- Land use determinations
- Groundwater use determination
- Communication Strategy for project

Performance Standards

For each release site, the facility proposes the performance standards that apply

- Source Control
- Statutory/Regulatory Requirements
- Site-Specific Risk Goal(s)

Conceptual Site Model

What you know about a facility; the CSM guides your way through the entire process

- Facility Profile
- Physical Profile
- Land Use and Exposure Profile
- Ecological Profile
- Release Profile
- Risk Management Profile

Data Quality Objectives

Using the scientific planning process to achieve

- Better quality data
- Focused investigations
- Only the information that is needed to make a risk management decision

Land Use Determinations

Based on actual use and realistic future use

- On-site: commercial / industrial, or other; State / facility has option of segregating land use
  - Institutional Control: required for any cleanup to other than residential or unrestricted use
- Off-site: land use based on existing use

Groundwater Use Determinations

Classification: default to states on beneficial use and non-degradation issues

- Resource Designation:
  - Drinking water or other protected use: throughout the plume cleanup
  - Non-drinking water use or other protected use: meet protective concentrations at POE
- Recognizes that not all GW resources are the same quality or require the same protection

Data Gaps

Filling data gaps for those areas that don't meet the performance standards

- Assess historical data
- DQOs based on performance standards
- Plan to collect data to meet DQOs
- Implementation schedule

HH and Eco Screening

Goal - Rapid Assessment of Risk

- Human Health
  - Screening Tables - two bright line tables (BLTs) that utilize reasonable default receptor and exposure parameters specific to commercial facilities
  - Site-Specific Risk Assessment
- Ecological Risk Evaluation
  - Exclusion Criteria Worksheet
  - Checklist

Managing Risk

Balance remedial option on effectiveness, performance and cost

- Active Remediation
  - source control, pump & treat, SVE
- Engineering Control
  - barrier that limits exposure and/or controls migration
- Institutional Control
  - legal mechanism to prevent exposure

Remington Arms

Case Study of Successful Corrective Action

Start to Finish in under 3 Years

Sporting Ammunition Manufacturing Facility

Lonoke, Arkansas

Remington, Lonoke Background

- Site is 20 miles east of Little Rock, AR
- Began operations in 1969 (sporting ammunition)
- Operations include metal finishing, electroplating, primer manufacturing
- Site divested by DuPont in 1993 (RCRA liability retained)
- Region 6 GPRA Baseline Facility
- No RFI history before 2001 (no soil or gw investigation)

Background

- Prior to CAS, pace of activity had been slow
  - Lack of permit driver for CA
  - Multiple rounds of facility/regulator negotiations
- ADEQ approached Remington/DuPont to participate in a performance based pilot in 2000
- Dupont was willing to proceed and signed a Letter of Agreement and submitted a NOI in December 2000

Implementation

"*Start to Finish in 3 Years*"

- CAS accelerates pace of activity and agency interaction:
  - **1/23/2001** **Initial scoping meeting**
  - **4/24/2001** Work plan
  - **5/1/2001** Eco screening evaluation
  - **6/27/2001** Phase 1 field work
  - **9/7/2001** CA-725/CA-750 determination
  - **1/15/2002** CAS summary report on sampling results
  - **1/22/2002** Progress meeting
  - **2/14/2002** Work plan addendum
  - **3/21/2003** Public notice; Initiate field work
  - **2003** Implement RMP; cleanup underway
  - **2004** **Cleanup complete**; issue RfR

CAS Implementation at Remington

- CAS facilitates early critical decisions
  "Scoping Meeting" held at plant in January 2001
  - Remington, DuPont, ADEQ and EPA participants
  - Key upfront discussions and agreements:
    - Site conceptual model and land use (current and future)
    - Constituents and media of interest
    - Remedial objectives (i.e., "performance standards")
    - Data quality objectives
    - Investigation strategy
  - Additional issues identified:
    - Need to address ecological assessment

CAS Implementation at Remington

- Key agreements in Scoping Meeting
  - CSM data gaps agreed on (GW, eco, etc.)
  - Industrial land use deemed appropriate (Residential for undeveloped portions of site)
  - Performance standards settled
    - Region 6 industrial SSLs for human health soil screen
    - MCLs at fence line/production wells for GW
    - State water quality criteria for SW

CAS Implementation at Remington

- Key agreements in Scoping Meeting (cont.)
  - Investigation approach, DQOs, screening tools agreed upon
    - SPLP for soil leaching potential
    - Surface geophysics to better define LF boundaries
    - XRF for field screen of metals (Pb) in soil
    - Metals hold time to reserve samples for efficient delineation
    - Use of on-site plant lab for explosive primer screen

CAS Implementation at Remington

- Ecological risk screening tools and site walkthrough (May 2001)
  - Exclusion checklist used to screen out 10 of 14 SWMUs
    - unattractive habitat and/or de minimus impacted area
  - Critical receptors and pathways identified at remaining units
    - input used to guide data collection

What made it work?

- **Streamlined admin process to conduct CA**
  - LOA vs. permit/order, a lot of work in a short time
- **Cooperative / results based partnership**
  - face-to-face meetings and conference calls
  - gained trust helps streamline review/oversight
  - builds on existing information
- **Up-front agreement on critical issues**
  - CSM (including land use, pathways, receptors, etc.)
  - DQOs
  - Performance standards
  - Screening criteria and methods

What made it work?

- **Flexibility to achieve results**
  - Sampling programs
  - Screening approaches
  - Recognizes changes will be necessary as data is collected
  - Remediation options
  - Appropriate public participation needs
- **Resources utilization can be better predicted**
  - $, personnel
  - time

What made it work?

- Giving O/O responsibility to manage site program
- Recognizing and promoting phased remediation
- Acknowledging cost as a function of remediation
- Remedial selection balanced between treatment, engineering controls and institutional controls

Message to Take Home

We have all the tools we need right now to successfully implement Results-Based Corrective Action

And move the process dramatically forward