



Comprehensive Environmental Response Compensation and Liability Act (CERCLA) aka “Superfund”

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Our mission is to lead and execute environmental programs and provide expertise that enables Army training, operations, acquisition and sustainable military communities.

ENABLING MISSION READINESS



Objectives

- **Provide an overview of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)**
 - Purpose
 - Processes and Procedures
 - Role of the community
- **Provide an overview of the Army's role in the CERCLA process**
 - Roles and responsibilities
 - Funding
 - Long term management
- **Provide an overview of the CERCLA process at Fort Detrick**



Statutes and Regulatory Authority



Comprehensive Environmental Response Compensation and Liability Act (CERCLA) Overview

- **The Department of Defense (DoD) began environmental cleanup in 1975 under the Installation Restoration Program (IRP).**
- **CERCLA was passed by Congress in 1980**
 - CERCLA Section 120 addresses Federal facilities
- **Purpose:**
 - Clean up closed and abandoned hazardous waste sites
 - Address risks to human health and environment resulting from releases or threatened releases of hazardous substances to the environment.
 - Tax chemical and petroleum industries to create a trust fund to pay for cleanup of orphan sites when no responsible party could be identified. **
- **CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986**

*****The trust fund is not used to clean up DoD sites. Congress appropriates money separately to clean up sites on Federal facilities***



Defense Environmental Restoration Program (DERP)

- **The Defense Environmental Restoration Program (DERP) was formally established by Section 211 of the Superfund Amendments and Reauthorization Act (SARA) of 1986.**
 - CERCLA actions taken by Federal facilities are limited by Section 120(a) of CERCLA - *“no department, agency, or instrumentality of the United States may adopt or utilize any such guidelines, rules, regulations, or criteria which are inconsistent with the guidelines, rules, regulations, and criteria established by the [EPA] Administrator under this Act.”*
- **Funds to implement the DERP are appropriated annually in the Defense Authorization Act ****

**** *The National Defense Authorization Act is the name of a United States federal law that has been enacted for each of the past 48 fiscal years to specify the budget and expenditures of the United States Department of Defense.***



The National Contingency Plan - CERCLA's Implementing Regulation

A statute is a law passed by the legislative body.

A regulation is a direction adopted by the executive branch, which has the binding effect of law. Congress sometimes passes generalized laws and then empowers a particular department of the executive branch to make regulations to implement the intent of the general law.

- **Statute:** Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.
- **Regulation Implementing CERCLA:** 40 CFR Part 300, National Oil and Hazardous Substances Pollution Contingency Plan, commonly known as the National Contingency Plan (NCP)



The National Contingency Plan (NCP)

- The NCP provides the procedures used to implement CERCLA requirements
- Establishes legal requirements enforceable by the EPA
- The NCP also established the National Priorities List (NPL)



NPL and Federal Facilities

- **To comply with CERCLA Section 120, the EPA must:**
 - Ensure that preliminary assessments (PAs) are conducted at each installation on the Federal Agency Hazardous Waste Compliance Docket
 - Evaluate each installation for inclusion on the National Priorities List (NPL) using Appendix A of the NCP, referred to as the Hazard Ranking System (HRS)
 - Include any installation on the NPL if its HRS score is greater than or equal to 28.5
- **A site can also be listed on the NPL if the Host state designates the release as highest priority;**
- **NPL listing can occur at any time during the CERCLA process but usually occurs during or after the initial phases of investigation**



Overview of Executive Order 12580

- In addition to CERCLA Section 120, the DoD Component must comply with Executive Order 12580.
- Executive Order 12580, signed in January 1987, addresses delegation of duties and powers assigned to the President in CERCLA, and specifically:
 - President delegated to Federal Agencies, CERCLA "lead agency" authority to conduct removal actions, remedial actions, and "any other response measures" consistent with the NCP.
 - Requires the development and use of an Administrative Record
 - Provides for public review and comment on remedial action plans

DoD Roles and Responsibilities

- **Non-NPL Federal facilities**

- EO12580 gives remedial responsibilities to the Federal agency or department having jurisdiction, custody, or control of the site.
- Activities are conducted with **oversight** by **State Regulatory Agencies**

- **Federal facility sites that are listed on the NPL**

- EO 12580 delegates remedial responsibilities to the Department of Defense (DOD).
- However, at all Federal facilities listed on the NPL, CERCLA §120 requires Federal agencies or departments to:
 - Perform remedial investigation and feasibility studies (RI/FS) (see CERCLA §120(e)(1)),
 - Enter into Inter-Agency Agreements (IAGs) (frequently called Federal Facility Agreements),
 - Initiate remedial actions, subject to EPA concurrence.





Federal Facilities Agreements

- **Ensure that the environmental impacts associated with past and present activities at the Site are thoroughly investigated and appropriate remedial action is taken as necessary to protect the public health, welfare and the environment;**
- **Establish a procedural framework and Schedule for developing, implementing and monitoring appropriate response actions at the Site in accordance with relevant law and guidance; and**
- **Facilitate cooperation, exchange of information and participation of the Parties in such actions.**



Processes and Procedures



CERCLA Process

- CERCLA authorizes two types of response actions – **Removal Actions** and **Remedial Actions**
- **Removal Actions** are usually short term actions that are considered “*interim*” and are usually not the final action taken at a site
 - To mitigate emergencies or releases that could quickly become a threat to public health and the environment;
 - To remove the source of contamination and control risk while the study process continues;
 - Can be conducted at any time within the remedial action process.
- **CERCLA removal actions include:**
 - Emergency Removal Actions (immediate action required)
 - Time-Critical Removal Actions (planning period of at least 90 days)
 - Non time-Critical Removal Actions (planning period of at least 6 months)

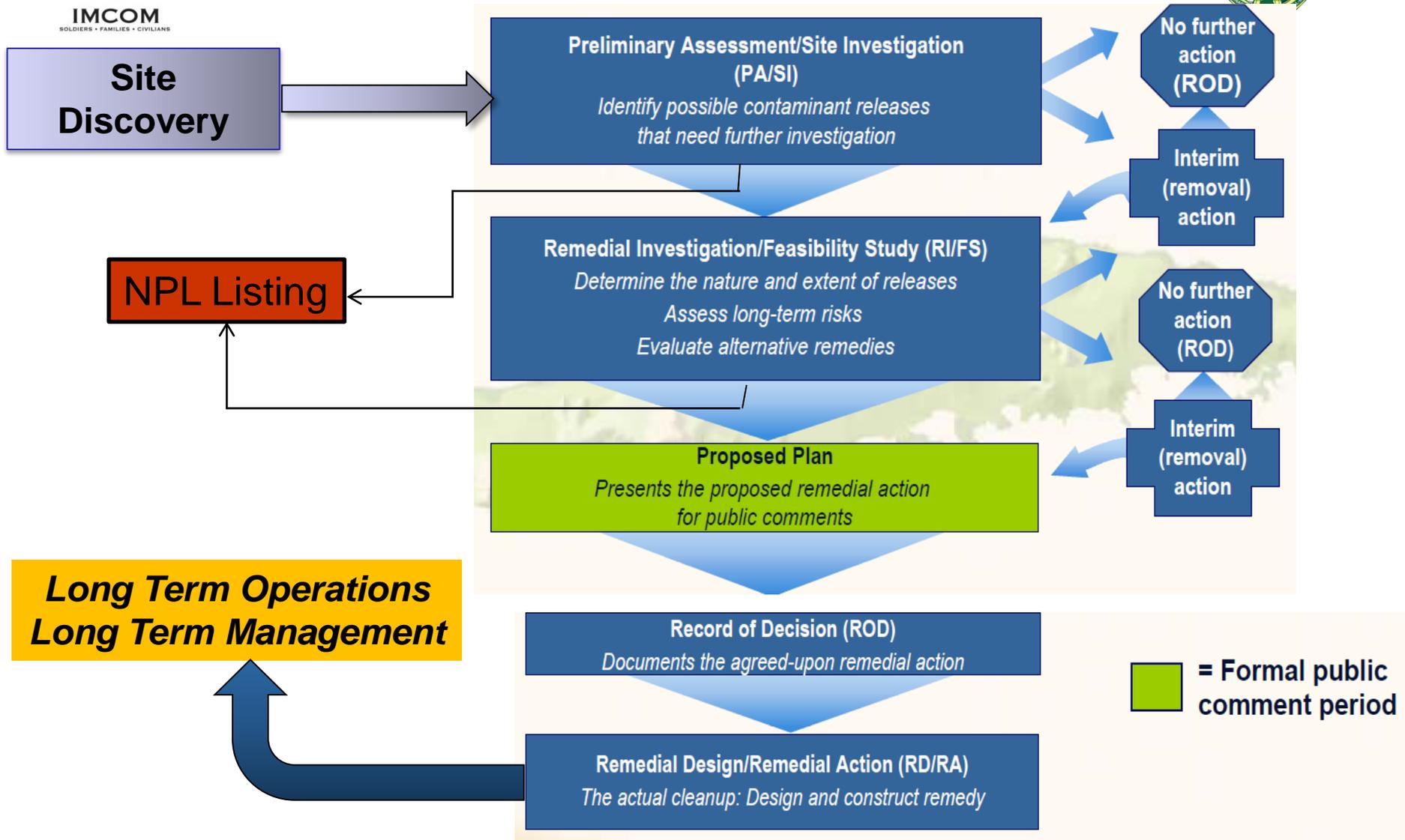


CERCLA Remedial Actions

- **Remedial Actions**
 - Long term response actions for a release that does not pose an immediate threat to public health and the environment
 - Permanent remedy taken instead of, or in addition to, removal actions
- **CERCLA Remedial Actions must follow the specific process identified in the NCP**
- **The remedial action process has six phases:**
 - Remedial Investigation (RI)
 - Feasibility Study (FS)
 - Selection of Remedy/Proposed Plan/Record of Decision (ROD)
 - Remedial Design (RD)
 - Remedial Action (RA)
 - Operation and Maintenance (O&M)



CERCLA Remedial Action Process





Preliminary Assessment

- **Preliminary Assessment (PA)**
 - Historical and other information about site conditions is gathered and evaluated
- **The primary goal of a PA is to evaluate the potential for contamination to have been released from the site.**
- **If the PA indicates that a release may have occurred, the NCP requires a more extensive study, a Site Investigation (SI), be conducted.**



Site Investigation

- **Site Investigation (SI)**
 - Samples of Air, Water, and Soil are collected and analyzed to determine:
 - Whether a release actually occurred,
 - What hazardous substances are present and
 - Whether the release poses a potential threat to human health



Remedial Investigation

- **A Remedial Investigation (RI) is conducted if the SI concludes that contamination was released into the environment**
- **Data is collected during the RI to:**
 - characterize site conditions;
 - determine the nature of the waste;
 - assess risk to human health and the environment; and
 - conduct treatability tests to evaluate the potential performance and cost of the treatment technologies that are being considered.
- **Because of complex site conditions, it may take several iterations of RI data collection before the site is fully characterized**



Feasibility Study

- **A Feasibility Study (FS) includes the development, screening, and detailed evaluation of remedial action alternatives.**
- **Section 121 of the CERCLA established five principal requirements for the selection of remedies:**
 - Be protective of human health and the environment
 - Attain ARARs (or provide grounds for invoking a waiver)
 - Be cost-effective
 - Utilize permanent solutions and alternative treatment technologies to the maximum extent practicable
 - Satisfy the preference for treatment that reduces contaminant mobility, toxicity, and volume as principal elements (or provide explanation otherwise)



Feasibility Study

- EPA identified nine criteria to evaluate remedial alternatives (Exhibit 2).
- The nine criteria analysis in the FS is conducted in two steps:
 - an individual evaluation of each alternative with respect to each criterion; and
 - a comparison of options to determine the relative performance of the alternatives and identify major trade-offs among them (i.e., relative advantages and disadvantages)
- The remedial alternative with the best performance against the evaluation criteria is the “*preferred alternative*”

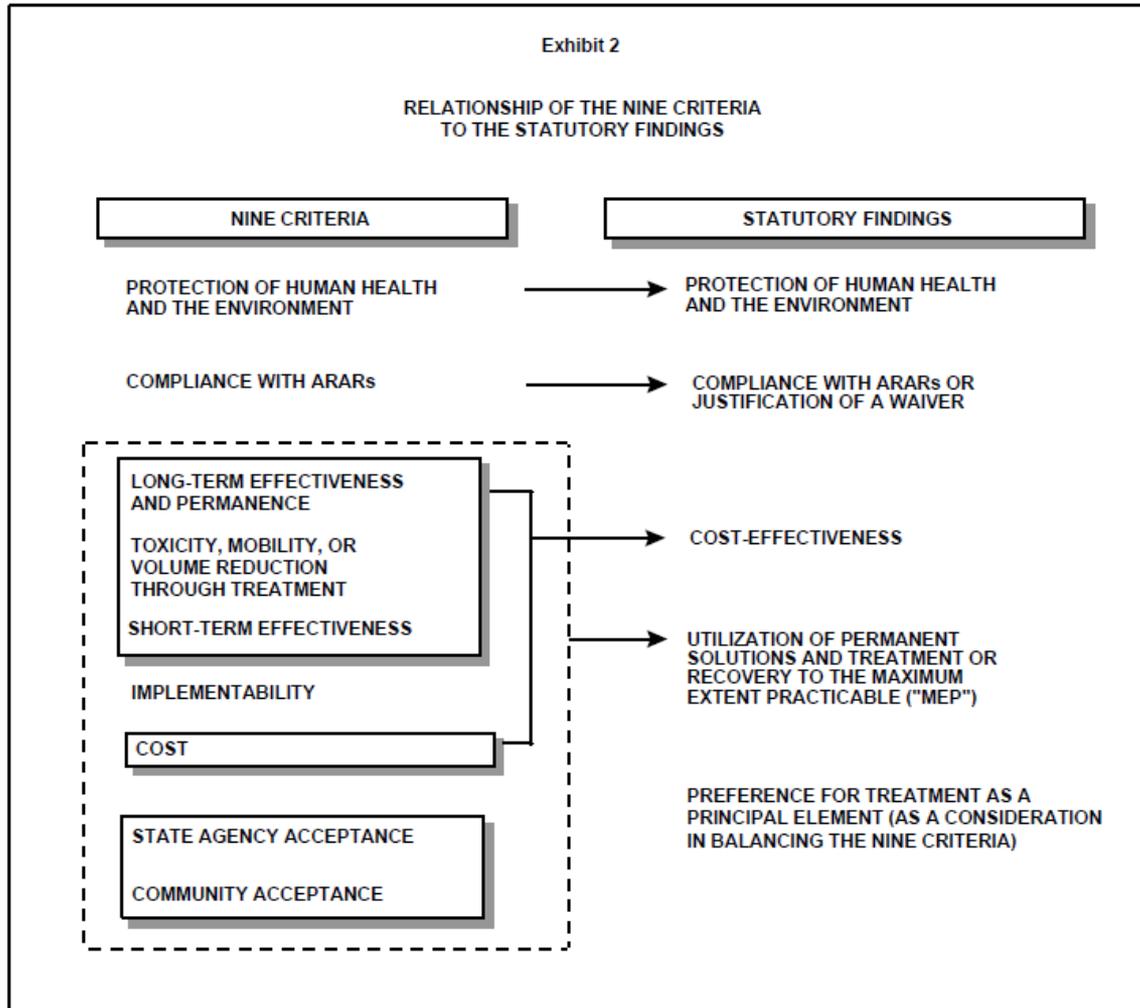


Feasibility Study

- **CERCLA 9 evaluation criteria:**
 - **Threshold Criteria**
 - Overall protection of human health and the environment
 - Compliance with ARARs
 - **Primary Balancing Criteria**
 - Long-term effectiveness and permanence
 - Reduction of toxicity, mobility, or volume
 - Short-term effectiveness
 - Implementability
 - Cost
 - **Modifying Criteria**
 - State acceptance
 - Community acceptance
- **The remedy that has the best overall performance against the criteria is chosen as the preferred alternative.**



Feasibility Study



From EPA 540-R-97-013 RULES OF THUMB FOR SUPERFUND REMEDY SELECTION



Explanation of CERCLA 9 Criteria

OVERALL PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

- How Alternative Provides Human Health and Environmental Protection

COMPLIANCE WITH ARARs

- Compliance With Chemical-Specific ARARs
- Compliance With Action-Specific ARARs
- Compliance With Location-Specific ARARs
- Compliance With Other Criteria, Advisories, and Guidances

LONG-TERM EFFECTIVENESS AND PERMANENCE

- Magnitude of Residual Risk
- Adequacy and Reliability of Controls

REDUCTION OF TOXICITY MOBILITY, AND VOLUME THROUGH TREATMENT

- Treatment Process Used and Materials Treated
- Amount of Hazardous Materials Destroyed or Treated
- Degree of Expected Reductions in Toxicity, Mobility, and Volume
- Degree to Which Treatment Is Irreversible
- Type and Quantity of Residuals Remaining After Treatment

SHORT-TERM EFFECTIVENESS

- Protection of Community During Remedial Actions
- Protection of Workers During Remedial Actions
- Environmental Impacts
- Time Until Remedial Action Objectives Are Achieved

IMPLEMENTABILITY

- Ability to Construct and Operate the Technology
- Reliability of the Technology
- Ease of Undertaking Additional Remedial Actions, if Necessary
- Ability to Monitor Effectiveness of Remedy
- Ability to Obtain Approvals From Other Agencies
- Coordination With Other Agencies
- Availability of Offsite Treatment, Storage, and Disposal Services and Capacity
- Availability of Necessary Equipment and Specialists
- Availability of Prospective Technologies

COST

- Capital costs
- *Operating and Maintenance Costs
- Present Worth cost

From EPA/540/G-89/004 Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA

STATE 1 ACCEPTANCE

COMMUNITY 1 ACCEPTANCE

*These criteria are assessed following comment on the RI/FS report and the proposed plan.



Selecting a Remedy

- **Proposed Plan**
 - Describes the remedial alternatives analyzed in the FS
 - Identifies the “**preferred alternative**”
 - Summarizes information used to make the decision
 - Solicits public comment on the preferred alternative
- **The public reviews and comments on the Proposed Plan, either in writing or at the public meeting.**
- **All relevant documents are maintained in the information repository.**



Record of Decision

- **Once public comments have been evaluated, a final remedy is selected and documented in the Record of Decision (ROD)**
 - Provides a rationale for the selected remedy
 - Documents whether and how the remedy has changed since the proposed plan
 - Establishes performance goals, standards and a time frame to achieve the goals
 - Provides a plan for remedy design and remediation
 - Identifies possible hazardous substances remaining on the site
- **After the ROD has been completed, the Community Involvement Plan for the site is revised to ensure that it is consistent with the final ROD.**



Remedial Design/Remedial Action

- **Remedial Design (RD) - Plans and specifications for the chosen cleanup are finalized**
 - Obtain approvals (i.e. permits, etc.)
 - Procure subcontractors, material and equipment
- **Remedial Action (RA) – the chosen remedy is constructed**
 - Conduct periodic inspections during construction



Construction Complete

- **Once all on-site physical construction is done, the site is listed as "Construction Complete"**
- **This does not mean that cleanup is done, just that:**
 - The methods and materials to do the cleanup are in place
 - All immediate threats have been addressed
 - Long-term threats are being controlled
- **To reach "Construction Complete":**
 - Waste generated as part of the construction must be disposed
 - Equipment used during the construction decontaminated and demobilized
 - Any temporarily relocated citizens returned to homes
 - A report documenting the ongoing operational or maintenance (including monitoring) activities that will be performed



Operation & Maintenance (O&M)

- **This phase of the process ensures that CERCLA cleanups provide for the long-term protection of human health and the environment.**
- **Activities during this phase include:**
 - operating and maintaining long-term cleanup technologies in working order,
 - regularly reviewing the site to be sure that the cleanup continues to be effective (i.e. five year reviews),
 - enforcing any necessary restrictions to minimize the potential for human exposure to contamination.



Long Term Stewardship

- **Most groundwater remedies take many years to achieve cleanup objectives (e.g. MCLs). EPA estimates approximately 80% of sites entering the construction completion universe will require Long Term Stewardship**
- **Long-term stewardship applies to sites where long-term management of contaminated environmental media is necessary to protect human health and the environment.**
- **Long-term stewardship generally includes the establishment and maintenance of physical and legal controls, implementation entities, authorities, accountability mechanisms, information and data management systems, and resources that are necessary to ensure that these sites remain protective of human health and the environment.**



NPL Delisting

- **EPA may delete a final NPL site if it determines that no further response is required to protect human health or the environment.**
- **A site may be deleted if EPA determines that one of the following criteria has been met:**
 - EPA, in conjunction with the State, has determined that responsible or other parties have implemented all appropriate response actions required.
 - A Remedial Investigation/Feasibility Study has shown that the release poses no significant threat to public health or the environment and, therefore, remedial measures are not appropriate.



Community Relations and Public Participation in the CERCLA Process

- **The NCP requires the lead agency to:**
 - Conduct interviews with local parties before commencing field work
 - Prepare a formal, site-specific, Community Relations Plan
 - Establish at least one local information repository
- **Frequent opportunities for formal public participation in the CERCLA process**
 - RI/FS – Participate on the Restoration Advisory Board (RAB)
 - Proposed Plan - Publish a notice of availability and brief analysis of the Proposed Plan in a major local newspaper; Make the Proposed Plan and supporting information available to the public; Provide an opportunity to submit comments on the Proposed Plan
 - Five Year Reviews
 - NPL Deletion: When all site cleanup has been completed and all cleanup goals have been achieved, EPA publishes a notice of its intention to delete the site from the NPL in the Federal Register and notifies the community of its availability for comment.

Restoration Advisory Boards (RABs)

- **10 U.S.C. 2705(d)(2)(A) requires the Secretary of Defense to promulgate regulations regarding RABs.**
 - RABs are community-oriented forums that encourage and facilitate communication between citizens and installation decision-makers regarding cleanup.
 - Participants may include representatives from the community; installation; state, local, or tribal governments and regulatory agencies; local activist organizations; or the business community.
 - Installation Commanders gauge community interest and evaluate criteria to establish a RAB every two years.
 - RABs are funded through DoD administrative support, Technical Assistance for Public Participation (TAPP) Grants, and EPA Technical Assistance Grants.





Status of the CERCLA Process at Fort Detrick



Fort Detrick CERCLA Overview

- **Fort Detrick has been in a “CERCLA like” process since 1977 (before CERCLA was enacted)**
 - The first PA conducted at Fort Detrick was in 1977.
- **In February 1988 FTD was listed on the Federal Facilities Compliance Docket.**
- **In 1991 EPA conducted a preliminary Site Inspection (SI) to collect data to score FTD for possible inclusion on the NPL by using the Hazard Ranking System model.**
- **As a result of these PA/SIs, 43 sites were identified as requiring additional evaluation and/or cleanup**



Fort Detrick CERCLA Overview

- **Until 2009, the Army has been implementing CERCLA at Fort Detrick with the Army as the lead agency with oversight by Maryland Department of the Environment (MDE) as the lead regulatory agency.**
- **Remedial Investigations/Feasibility Studies were conducted, with the Army as the lead agency, at the 43 identified sites from 1994 to the present**



Fort Detrick CERCLA Overview

- **Fort Detrick Remedial Actions**
 - In February 2008 a No Further Action (NFA) Decision Document (DD) for five sites in Area B was signed. Sites Area B-Grid (FTD-05), Area B-Ammo (FTD-07), Area B-Skeet (FTD-29) and Area B-20 North/South (FTD-43) were closed with NFA required.
 - In December 2007 and March 2009, DDs were signed selecting capping with land use controls (LUCs) for six restoration sites encompassing eight disposal areas. In June 2010, caps were completed on Area B-11 (FTD-49); Area B-2 (FTD-50); Area B-3 (FTD-51); Area B-6 (FTD-69); Areas B-8, Trenches N of B-8, and B-18 (FTD-70); and Area B-10 (FTD-71).
 - Long term monitoring and maintenance of the caps are underway.
- **Final CERCLA remedies have been implemented with MDE approval at 42 of 43 sites (all identified sites have been addressed except Area B Groundwater)**



Fort Detrick CERCLA Overview

- **Fort Detrick CERCLA Removal Actions**

- Detection of volatile organic compounds (VOCs) (above the Maximum Contaminant Levels) in domestic wells off Fort Detrick property adjacent to Area B in 1992 and 1993 prompted the placement of some residents on bottled water with subsequent connection of affected residents to the City of Frederick water system.
 - Removal Action
 - Action was a proactive measure to ensure that human health was protected. No actual risk was identified; action was taken because of the uncertainty associated with the Karst environment.



Fort Detrick CERCLA Overview

- **Fort Detrick CERCLA Removal Actions**

- The Army conducted a hot spot removal action at Area B-11 (a former waste disposal area) from 2001 to 2004 to remove the presumed primary source of tetrachloroethene (PCE) and trichloroethene (TCE) migrating to groundwater.
 - Non – Time Critical Removal Action
 - Action was conducted to remove source material while the study process continued.



Fort Detrick CERCLA Overview

- **Fort Detrick Area B Groundwater (FTD-72) was added to the National Priorities List (NPL) on 9 April 2009, based on a Hazard Ranking Score of 49.52 (NPL Final Rule #46 [74 Federal Register 1626]).**
- **A Federal Facilities Agreement (FFA) between the Army and USEPA was signed on 17 Dec 10 and was finalized 5 August 2011 after public comment. (The MDE is not a signatory to the FFA).**
- **A draft Site Management Plan (SMP) (Appendix F of the FFA) was submitted to EPA on 1 Sep 2011.**
- **A final SMP is expected Oct 2011.**
- **EPA will review the final decisions made on 13 Area B source areas**



Fort Detrick CERCLA Overview

- A 3rd PA (Archive Search Report (ASR)) was initiated in 2011 and is expected to be final by early 2012
- If information is found in the ASR that indicates contaminant releases may have occurred that have not been investigated, Fort Detrick will reenter the CERCLA remedial action process to address these specific releases
- SI level investigation of former herbicide test site and background data collection pending signature of Right of Entry (ROE)



END OF PRESENTATION

INSTALLATION MANAGEMENT COMMAND



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