



NAVFAC Pacific

NAVFAC Pacific Environmental Restoration Program

DoD Hawaii Small Business Forum

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Purpose



- **Increase understanding of the Environmental Restoration Program at NAVFAC Pacific**
- **Provide insight on how consultants and contractors support our program**
- **Overview of the CERCLA Process**

Agenda

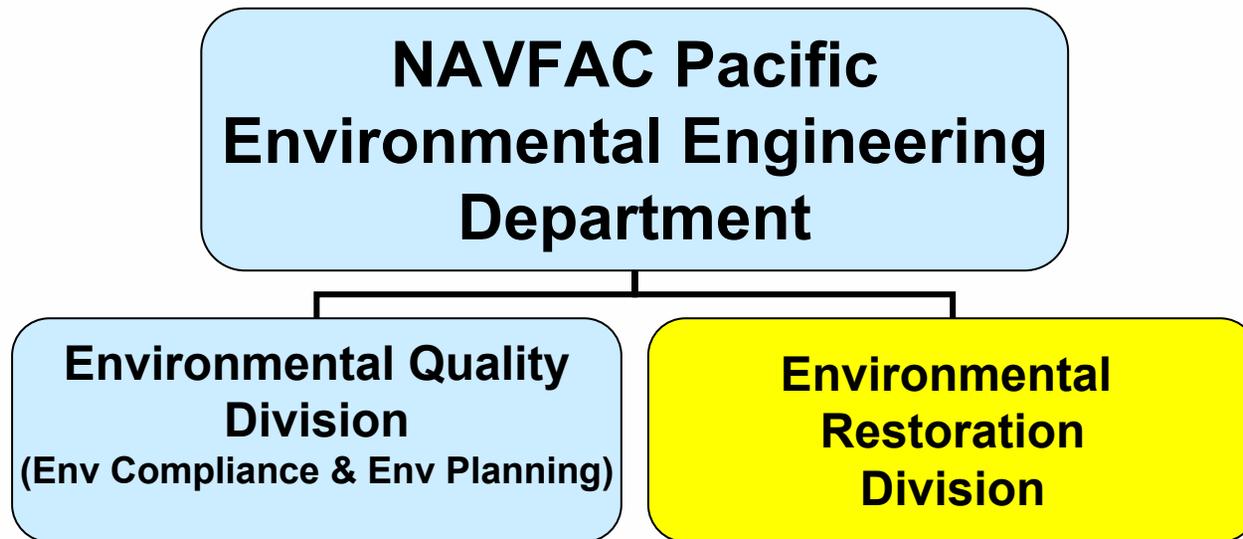


- **Environmental Restoration Program Overview**
- **Regulatory Framework**
- **Execution of the CERCLA Process**



Environmental Restoration Program Overview

Environmental Restoration Division



Program Overview



- **Department of the Navy
Installation Restoration (IR) Program Purpose**
 - Reduce risk to human health and the environment from past waste disposal operations and hazardous material spills at Navy/Marine Corps activities
 - Identify, investigate, assess, characterize, and clean up or control past releases of hazardous substances
 - Compliance with CERCLA, SARA and other laws
 - Cost effective manner



Program Overview



- **Fund Sources**

- **Environmental Restoration, Navy (ER,N), \$20M/yr**
- **Base Realignment and Closure (BRAC) Environmental, <\$1M/yr**
- **Activity Funds (Pacific Fleet, Navy Region Hawaii, etc.), \$1M/yr**



NAVFAC Pacific AOR

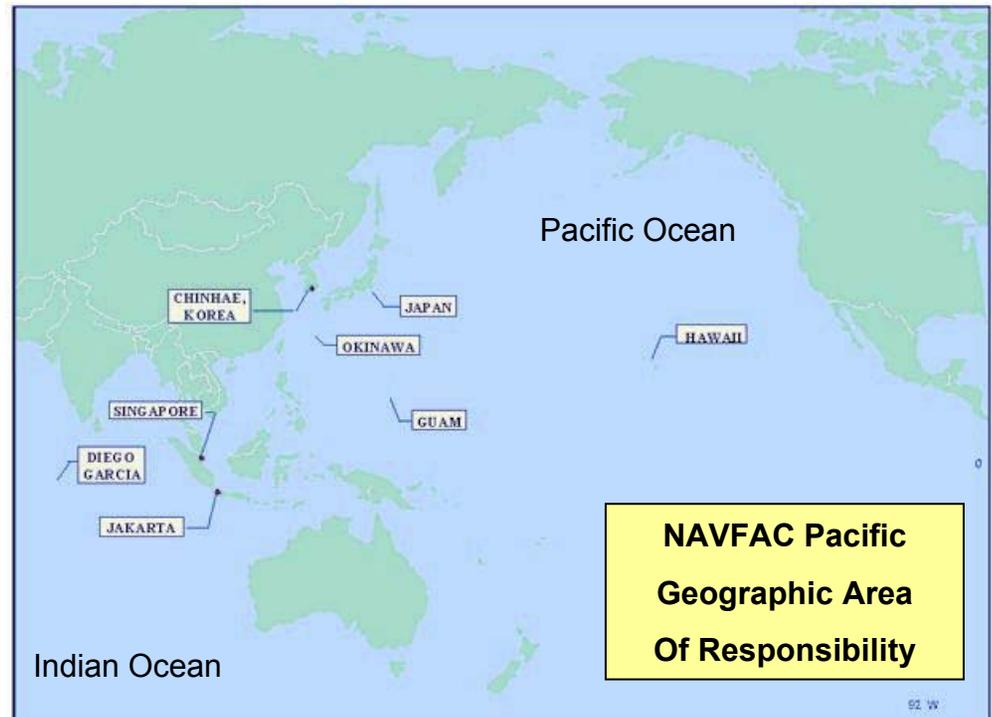


- **Pacific and Indian Ocean areas**

- Hawaii
- Guam
- Midway

- **Southeast Asia**

- Japan
- Korea
- Singapore
- Diego Garcia



Program Overview



- **Site Discovery and Characterization**

- Preliminary Assessment/Site Inspection (PA/SI)
- Remedial Investigation/Feasibility Study (RI/FS)

- **Selection of Remedy**

- Proposed Plan
- Record of Decision

- **Cleanup**

- Removal Action, or Remedial Design/Remedial Action (RD/RA)
- Remedial Action Operation (RAO)

- **Post Cleanup**

- Long-Term Monitoring/Operation (LTM/LTO)
- Site Closeout



Program Overview



•Common Contaminants of Concern

- polychlorinated biphenyls (PCBs)
- total petroleum hydrocarbons (TPH)
- heavy metals

•Remediation Technologies

- thermal treatment
- landfill capping
- groundwater and oil recovery systems
- excavate and haul
- soil vapor extraction
- solidification, stabilization
- soil washing



Program Overview



•Small Business Contracting

- Exceeded 40% goal for obligations to small business prime contractors
- Exceeded small business subcontracting goals
- Awarded \$76M in contract capacity to small businesses in FY2004



Program Overview



Environmental Remediation Services:

- **Small Business Remedial Action Contract (SB RAC 1 & 2), \$30M/\$40M ceiling, 1 base/4 option years, CPAF**

- Environmental Chemical Corp. (SDB)
- Dawson Group, Inc. (SDB, 8(a), NHO)

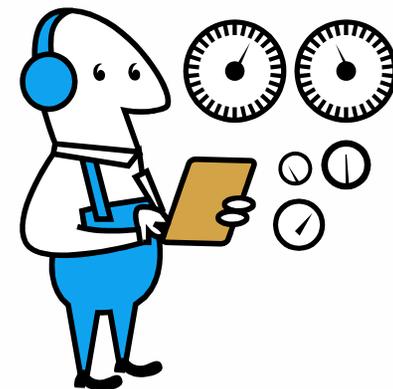
- **Fixed Price Remedial Action Contract (FRAC), \$25M ceiling, 1 base/4 option years, FP IDQ**

- Environmental Chemical Corp. (SDB)

Engineering and Technical Services:

- **Environmental Technical Services (ETS) and Remedial Action Operation/Long Term Monitoring (RAO/LTM), \$3M ceiling, 1 base/ 2 option years, FP IDQ**

- Dawson Group, Inc. (SDB, 8(a))
- Environet, Inc. (SDB, 8(a))
- Environmental Science International (SDB, 8(a))



Program Overview



Architect-Engineer Services:

- **Comprehensive Long-Term Environmental Action Navy (CLEAN 3) , \$100M ceiling, 1 base/9 option years, CPAF**
 - Earth Tech, Inc.

Other Requirements, FFP, as needed

- **Soil Washing Project**
 - Hawaii International Environmental Services, Inc.
- **Waste disposal**
 - Pacific Commercial Services

Regulatory Framework

Regulatory Framework



- **Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended by The Superfund Amendments and Reauthorization Act of 1986 (SARA)**
- **National Oil and Hazardous Substances Pollution Contingency Plan (NCP)**



Environmental Laws



- **Federal statutes**
(e.g., Resource Conservation and Recovery Act [RCRA])
- **Federal regulations** (detail implementation of the laws)
- **State and Territory statutes and regulations**
- **Federal court decisions and interpretations of statutes**
- **State court decisions interpreting common law**



Enforcing Agencies for Environmental Laws



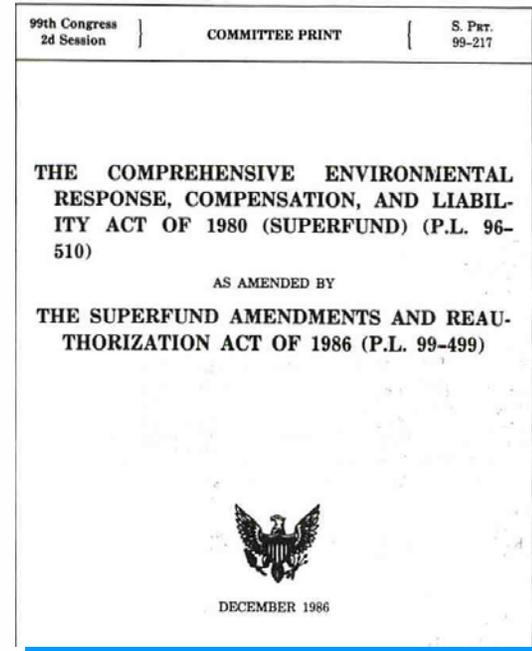
- Environmental Protection Agency (EPA)
- Guam EPA (GEPA)
- Department of Transportation (DOT)
- Occupational Safety and Health Administration (OSHA)
- Trustee Agencies
 - U.S. Fish and Wildlife Service (FWS)
 - National Oceanic and Atmospheric Administration (NOAA)
 - National Marine Fisheries Service (NMF Service)



CERCLA



- **Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), 40 USC 9601 et seq., 40 CFR 300-373**
- **Commonly known as “Superfund”**
- **Objectives:**
 - **Correct past release of hazardous substance**
 - **Respond to substantial threat of a release exists that may present an imminent danger to public health or welfare**



CERCLA



- Air, surface water, groundwater, and soil
- Focus on cleanup of past/inactive hazardous waste sites
- Petroleum exclusion
 - IR program addresses petroleum under other response mechanisms
- DoD added later
 - Defense Appropriations Act of 1984
 - Defense Environmental Restoration Account established by Congress in 1987



Superfund Amendments & Reauthorization Act (SARA)



- **First major revision of CERCLA, passed by Congress in 1986**
- **Made federal facilities subject to requirements of CERCLA**
- **Expanded NCP by including provisions that remedial actions attain applicable or relevant and appropriate requirements (ARARs)**



ARARs



- **CERCLA has no cleanup standards of its own. Uses other Federal and State laws and regulations.**
- **Applicable or relevant and appropriate requirement are identified.**
- **A law or regulation is “applicable” if the legal standard would apply independent of the CERCLA cleanup.**
- **A law or regulation is “relevant and appropriate” if it makes sense to apply it at the site even though it is not otherwise legally required.**



Example Potential ARARs



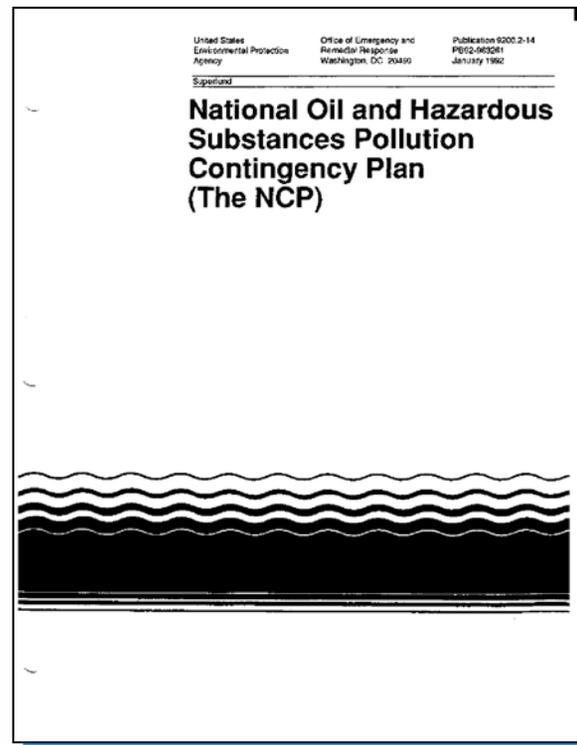
- **Resource Conservation and Recovery Act (RCRA) of 1976**
- **Toxic Substances Control Act (TSCA)**
- **Clean Water Act (CWA), aka Federal Water Pollution Control Act**
- **Safe Drinking Water Act (SDWA)**
- **Hazardous and Solid Waste Amendments of 1984 (HSWA)**
- **Clean Air Act (CAA), as amended**
- **Endangered Species Act (ESA)**
- **National Historic Preservation Act (NHPA)**
- **National Environmental Policy Act of 1969 (NEPA)**



NCP



- **National Oil and Hazardous Substances Pollution Contingency Plan, 40 CFR 300**
 - Provides organization structure and procedures for preparing for and responding to discharges of oil and releases of hazardous substances, pollutants and contaminants.
- **Subpart E – Hazardous Substance Response**
 - Establishes guidelines for environmental investigations and cleanups



- **Defines 5-Step Response Process:**
 - 1) **Site discovery or notification**
 - 2) **Preliminary Assessment and Site Inspection (PA/SI)**
 - 3) **Establishment of Priorities for Remedial Action**
 - 4) **Implementation of Remedial Investigation/Feasibility Study (RI/FS)**
 - 5) **Remedial Design (RD) or removal action design and construction**
- **Analysis of alternative cleanup remedies must consider the nine evaluation criteria required by NCP**

RCRA



- **Resource Conservation and Recovery Act (RCRA) of 1976, 42 USC 6901 et seq., 40 CFR 240 - 280**
- **Management of on-going hazardous and solid waste operations**
 - **Solid waste (Subtitle D)**
 - **Hazardous waste (Subtitle C) - “cradle to grave”**
 - **Underground storage tanks (USTs) (Subtitle I)**
 - **Medical wastes (Subtitle J) – 1988 amendment**
- **Cradle-to-grave tracking of hazardous material, including record keeping on generation, transportation, storage, and disposal of hazardous materials**
- **Reauthorized by Hazardous and Solid Waste Amendments (HSWA) in 1984**



RCRA Applicability



- **Regulates generation (i.e., storage and disposal) and transport of hazardous wastes at CERCLA sites**
- **Usually an ARAR for CERCLA sites**
- **RCRA 90-day storage period does not apply at CERCLA sites**
- **Two types of hazardous waste regulated (listed and characteristic)**
- **Cleanup levels defined by RCRA may apply at CERCLA sites**
- **Regulates UST cleanups on Guam**



CERCLA vs. RCRA



- A CERCLA site normally is a closed site where a hazardous substance had been stored, placed, disposed, or deposited.
- RCRA normally applies to sites still in operation involving solid and hazardous waste management.



CERCLA vs. RCRA



Activity	CERCLA	RCRA
Regulated Facility	<ul style="list-style-type: none"> •Any site where a hazardous substance has been stored, placed, disposed, or deposited, whether or not it is subject to RCRA 	<ul style="list-style-type: none"> •Contiguous property controlled by an owner/operator seeking a RCRA permit
Regulated Materials 	<ul style="list-style-type: none"> •“Hazardous Substance” •Broader list of materials than RCRA •Petroleum exclusion •Triggering event is release or threatened release •Amount of waste not considered 	<ul style="list-style-type: none"> •“Hazardous Waste” •Listed or Characteristic Hazardous Waste as defined in 40 CFR 261, 264 •Concentration or quantity limits may apply •Considers amount of waste generated during one month

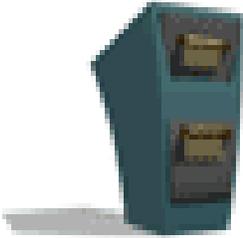
CERCLA vs. RCRA



Activity	CERCLA	RCRA
<p data-bbox="110 446 439 546">Land Disposal Restriction</p> 	<ul style="list-style-type: none"><li data-bbox="510 446 1163 546">•“Off Site Rule”, 40 CFR Part 300.440<li data-bbox="510 575 1191 789">•Defines criteria for approving facilities for receiving waste from response actions taken under CERCLA.<li data-bbox="510 818 1188 1032">•Purpose is to prevent wastes generated from cleanups to be released at off-site facilities	<p data-bbox="1239 446 1629 604">Waste shall meet receiving facility requirements.</p>

CERCLA vs. RCRA



Activity	CERCLA	RCRA
<p data-bbox="110 421 403 525">Public Participation</p> 	<ul style="list-style-type: none"> • Specified in regulations. • Restoration Advisory Boards (RABs) established to increase community participation, understanding, and support of IR efforts; ensure remedial/response actions are responsive to community requirements, and fulfill requirements of CERCLA. • Information repository contains listing and copy of all RA and O&M information and data supporting site close-out. 	<ul style="list-style-type: none"> • Occurs as part of permitting process 

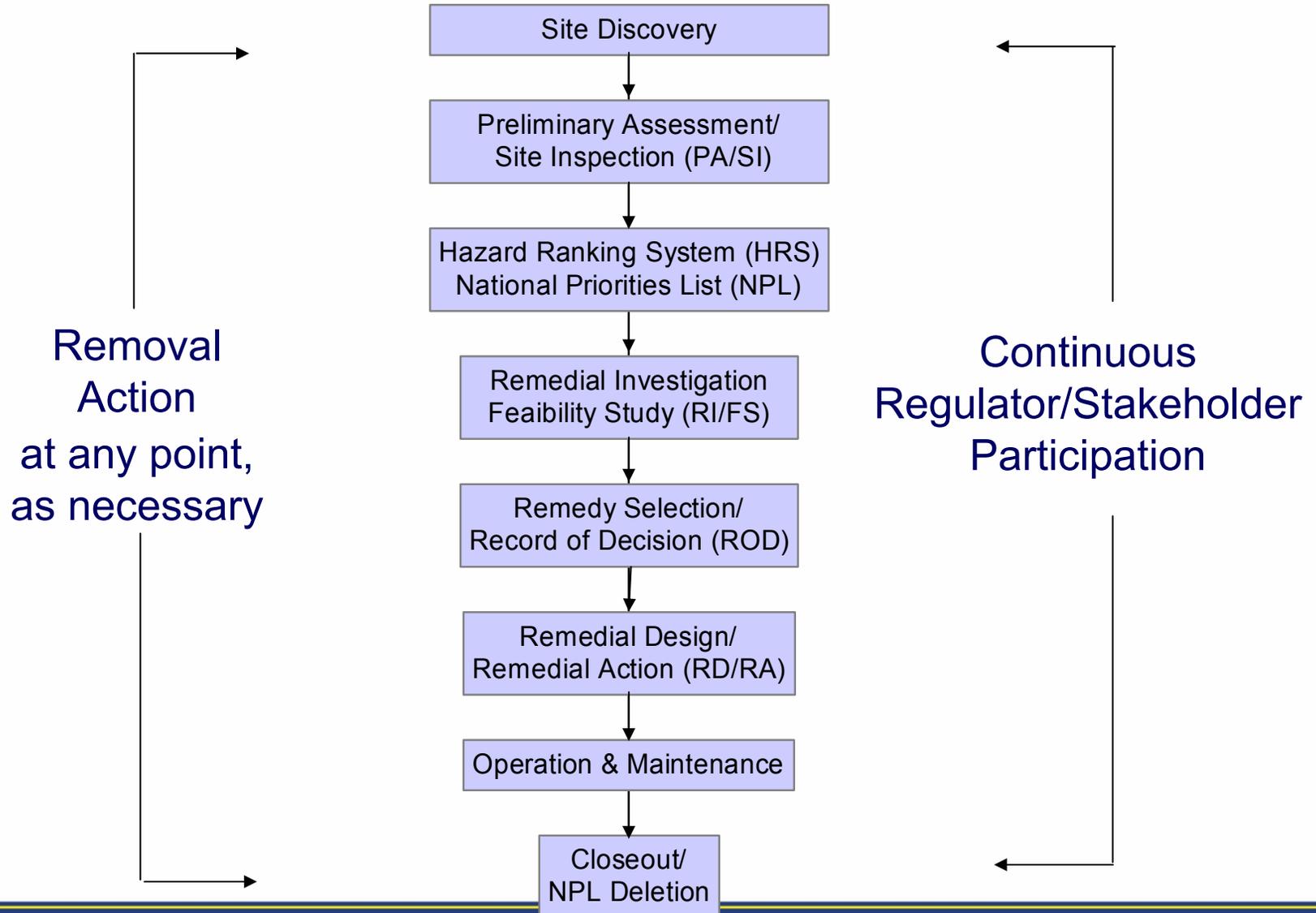
CERCLA vs. RCRA



Activity	CERCLA	RCRA
Governing Standards	ARARs	Incorporated into facility's permit
Cleanup Levels 	Negotiation based on risk and ARARs. Navy involves regulators throughout process. Stringent data quality to ensure defensible risk assessment.	Negotiation based on action levels
Permits	<ul style="list-style-type: none"> •Per NCP, “No federal, state, or local permit is required...for the portion of any removal or remedial action conducted entirely onsite [CERCLA site]”. •Must comply with substantive provisions of regulations 	Permits required.

CERCLA PROCESS

Traditional CERCLA Process

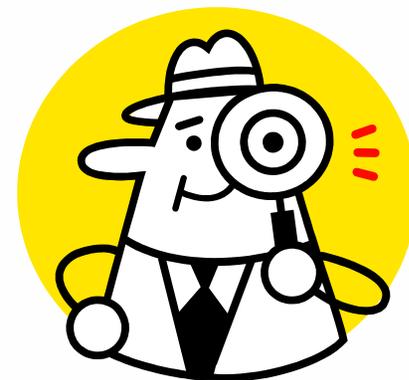


Preliminary Assessment (PA)

- Determine if an identified site may have been contaminated by hazardous materials from past operations, posing a potential hazard
- Determine if further action is necessary
- Historical records and document search

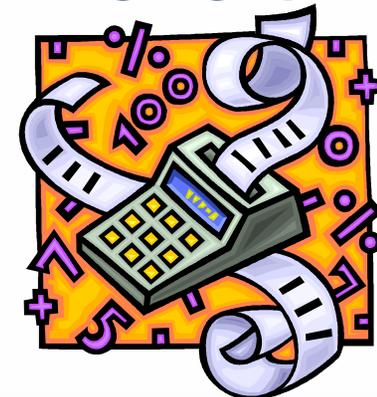
Site Inspection (SI)

- Site visit and sample collection to define and further verify and characterize alleged releases, and assess need for removal actions



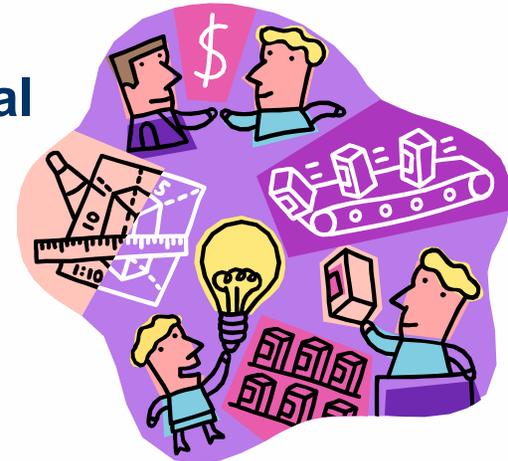
Hazard Ranking System (HRS)

- Evaluation of potential relative risk to public health and the environment based on information obtained from the SI
- EPA assigns each site a score from 0 to 100, considering:
 - Likelihood that a site has released, or has potential to release, contaminants into the environment
 - The characteristics of the substance(s), i.e. toxicity and quantity
 - The people or sensitive environments affected by the release.
- Sites with HRS scores >28.5 are considered for placement on EPA's National Priorities List (NPL), representing high priority sites.
 - Pearl Harbor Naval Complex
 - NCTAMS EASTPAC



Remedial Investigation (RI) Objectives

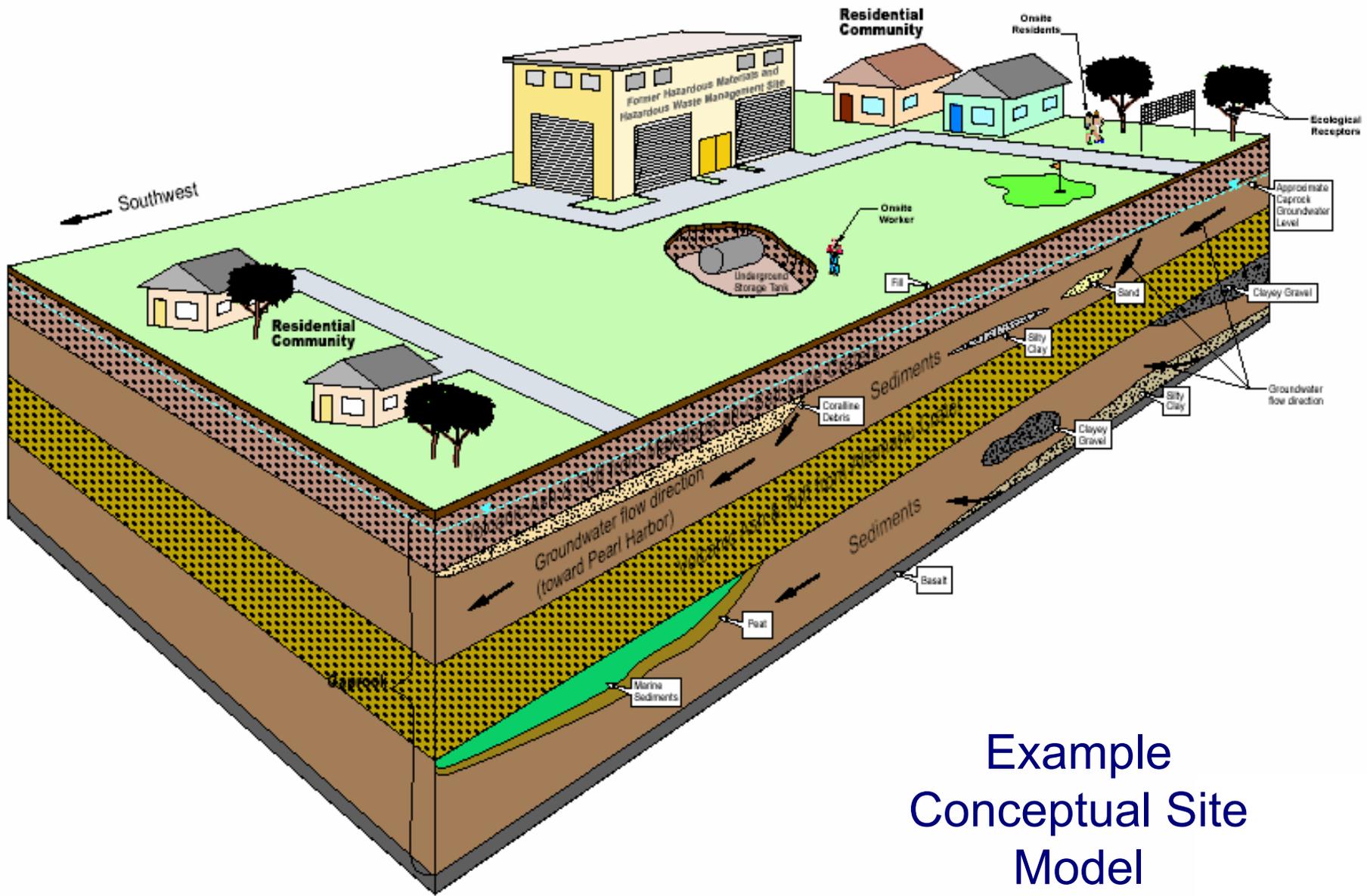
- Evaluate the lateral and vertical extent of contamination in air, soil, surface water, and groundwater.
- Identify contamination present.
- Evaluate the existing and potential migration pathways
- Evaluate the existing or potential threat to human health and/or environment
- Identify and evaluate the appropriate removal actions to address identified sites



Remedial Investigation (RI) Steps

- Project Scoping
- Conduct Site Kickoff Meetings
- Evaluate Existing Data
- Conduct Site Visit
- Develop Conceptual Site Model
- Identify Preliminary Remediation Goals and General Response Actions
- Initiate Identification of Potential ARARs
- Identify Initial Data Needs and Data Quality Objectives





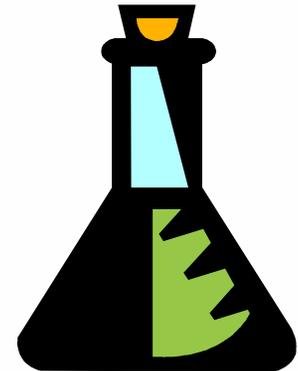
Example
Conceptual Site
Model

- **Work Plan**

- Documents decisions and evaluations made during scoping
- Project methodology
- Site specific logistical requirements
- Coordination with on-going operations
- Investigative derived waste (IDW) disposal

- **Sampling and Analysis Plan**

- Combined with Work Plan
- Number, type, location of samples
- Type of analyses required: Field test kits, laboratory analysis
- Rationale for sampling plan and confirmation samples
- Sampling procedures
- Data quality objectives



- **Health and Safety Plan**
 - Appendix to Work Plan
 - Identify potentially hazardous operations and exposures, i.e. Activity Hazard Analysis
 - Prescribe appropriate personnel protective equipment (PPE), monitoring, decontamination procedures, and other protective measures for on-site workers, surrounding community, and the environment
 - Identify health and safety staff organization and responsibilities
 - Identify appropriate training, accident reporting, record keeping
 - Emergency response plan and contingency procedures
 - Comply with OSHA 29 CFR 1910 and 29 CFR 1929; Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, latest edition



•Site Characterization

– Conduct field investigations

– Perform sample analysis

- Utilize analytical laboratories that have successfully completed the Navy Laboratory Assessment Program conducted by the Naval Facilities Engineering Service Center (NFESC)
- Perform data validation

– Define nature and extent of threat posed by contamination

- Determine actual and potential magnitude of releases from sources
- Determine mobility and persistence of source contaminants
- Identify contaminant pathways

– Conduct baseline risk assessment for various exposure routes

- Identify and characterize current and potential risks to human health and the environment

– Further identify ARARs



–Evaluate additional data needs

- Have DQOs have been met
- Have the risks posed by the site been adequately defined
- Does the remedial action need to be documented
- Has the data necessary for development and evaluation of remedial action alternatives been obtained

•Treatability Studies

- Obtain data to support remedy selection and implementation
- Bench scale test sufficient if technology has performance and cost data.
- Pilot scale tests may be necessary
 - information needed to operate the technology at full scale is limited,
 - secondary effects of process need to be investigated, or
 - waste being tested is complex or unique.
- Evaluation report analyzes and interprets the test results, considering the technology's effectiveness, implementability, environmental impacts, and cost.



Feasibility Study (FS)

- **Development and Screening of Alternatives**

- Refine remediation goals
- Develop general response actions
- Identify and screen appropriate technologies
- Select representative process options
- Reevaluate data needs
- **Assemble list of alternatives, including**
 - Alternatives for on-site treatment or disposal
 - Alternatives for off-site treatment or disposal
 - Alternatives which attain applicable and/or relevant public health or environmental standards
 - Alternatives which exceed applicable and/or relevant public health or environmental standards
 - Alternatives which may not attain, but closely approach applicable and/or relevant public health or environmental standards and will reduce likelihood of present or future threat from contaminants



- **Detailed evaluation to assess each alternatives against nine criteria specified in the NCP:**
 - Overall protection of human health and the environment;
 - Compliance with ARARs
 - Long-term effectiveness and permanence
 - Reduction of toxicity, mobility, or volume through treatment
 - Short-term effectiveness
 - Implementability
 - Cost
 - State acceptance
 - Community acceptance
- **Final Report shall contain all information needed to select logical course of remedial action.**



Remedy Selection/ROD



Remedy Selection – identification of preferred remedial action alternative.

- **Proposed Plan (PP)**

- Identifies proposed remedy to the public
- Highlights key aspects of the RI/FS
- Provides brief analysis of remedial action alternatives
- Explains rationale for preferred alternative
- Solicits public review and comment on all alternatives presented. Notice of the PP published in a major local newspaper, made available in an information repository.
- Identifies 30 day comment period
- Typically in Fact Sheet format



Remedy Selection/ROD



•Record of Decision (ROD)

–Following receipt of public comment on the Proposed Plan, the ROD is completed including:

❖ Declaration

– Formal statement that makes the ROD legal and binding.
Signed by EPA.

❖ Decision Summary

– Overview of problems and risks posed by conditions at the site, remedial action alternatives, and analysis of the alternatives.

❖ Responsiveness Summary

– Addresses comments received from the public.



Remedial Design (RD)

- A-E prepare and submit design (plans and specifications) of selected remedy
 - NAVFAC Pacific A-E guide, P-74, latest edition
- P&S reviewed by EPA and State
- Conduct community relations activities



Removal/Remedial Action (RA)

- **Construction of the selected alternative**
- **Work Plan**
 - Incorporate updated agreements
 - Project methodology
 - Site specific logistical requirements
 - Coordination with on-going operations
 - Waste disposal
 - Restoration of site
- **Sampling and Analysis Plan**
 - Combined with Work Plan
 - Number, type, location of samples
 - Type of analyses required: Field test kits, laboratory analysis
 - Rationale for sampling plan and confirmation samples
 - Sampling procedures
 - Data quality objectives



- **H&S Plan**
 - Appendix to Work Plan
 - Identify potentially hazardous operations and exposures
 - Prescribe appropriate protective measures for on-site workers, surrounding community, and the environment
 - Comply with Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, latest edition
 - Subcontractor Management
- **Construction oversight by Navy and PCAS Contractor**



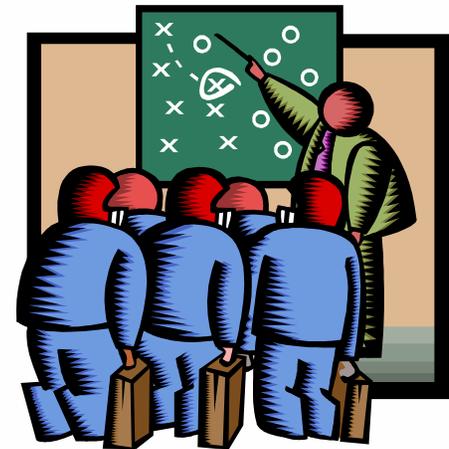
- **Remediation Verification Report**
 - Summarize work performed
 - Explain rationale and affect of any deviations to planning documents
 - Document post-removal action confirmation sampling locations and results, and data validation results
 - Document achievement of removal action objectives
 - Summarize all materials used/installed at site.
 - As-built record drawings
- **O&M Plan**
 - For installed material and equipment
 - Manufacturer's recommendations and warranties



Community Relations



- **Restoration Advisory Board (RAB) Support**
 - Prepare and present presentation packages, as needed throughout process



- **Operation and Maintenance (O&M)**
 - Groundwater and air monitoring
 - Inspection and maintenance of treatment equipment remaining on site
 - Maintenance of security measures or institutional controls.



Closeout / NPL Deletion



•Site Closeout

- Agreement with regulators that remedy is complete.
- All equipment decontaminated and demobilized
- Restoration of site complete
- Five-year review required if hazardous substance remains on-site (e.g. containment) to ensure integrity of cleanup and no new threats to human health and the environment

•NPL Deletion

- Lengthy process
- EPA submits intention to delete site from NPL by publishing a notice in the Federal Register



Removal Process



- **Removal Site Evaluation (RSE)**

- Additional sampling if needed
- Identification of the source and nature of the release or threat of releases
- Evaluation of the threat to public health
- Evaluation of the magnitude of the threat
- Evaluation of factors necessary to determine if a removal action is appropriate



- **Engineering Evaluation/Cost Analysis (EE/CA)**

- Characterization of the site using existing data to the extent possible
- Identification of scope, goals, and objective of the non-time critical removal action
- Identification and evaluation of a limited number of alternatives in detail against the nine criteria specified in the NCP

Removal Process



- **Action Memorandum (AM) - Primary decision document that includes:**

- need for a removal action, identifying the threat to human health and the environment
- purpose of the removal action
- proposed response
- rationale for the removal action
- site conditions and background information
- cost information
- identifies what will happen if no action is taken or the removal is delayed



- **RVR, ROD, O&M, Closeout similar to Remedial Action Phase**

Questions?

