



DEPARTMENT OF THE NAVY

INDIAN HEAD DIVISION
NAVAL SURFACE WARFARE CENTER
101 STRAUSS AVE
INDIAN HEAD MD 20640-5035

5090
Ser 046C/176
29 Jul 96

Mr. Shawn Phillips
Engineering Field Activity Chesapeake
Washington Navy Yard Building 212
901 M Street SE
Washington, DC 20374-5018

Dear Mr. Phillips:

We are forwarding the minutes from the Restoration Advisory Board (RAB) tour/meeting that was held on Thursday, July 18, 1996, and would like to thank those RAB and community members who were able to attend.

During the meeting, Mr. Elmer Biles asked if we had seen the Final Federal Facilities Environmental Restoration Dialogue Committee Report (FFERDC). We currently have one copy of the report, but will obtain additional copies and place them in the Installation Restoration (IR) Information Repositories within the next two weeks.

In addition, Brown & Root Environmental, our Comprehensive Long-term Environmental Action Navy (CLEAN) contractor, has completed the draft Master Plans for Remedial Investigations (July 1996) and the draft Project Specific RI Work Plan (July 1996). These documents will be available in the IR Information Repository by July 29, 1996. We welcome your review of these documents. If you do plan to review these documents, please forward your comments to us by August 16, 1996.

We would also like to mention that during our Activity's reorganization, the Environmental Division has been moved from the Public Works Department to the Safety Department. Therefore, please use the following address when corresponding with us:

Indian Head Division,
Naval Surface Warfare Center
ATTN: Code 046, Bldg. D-327
101 Strauss Avenue
Indian Head, MD 20640

5090
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You may recall that last year we forwarded various chapters of the Department of the Navy Environmental Restoration Plan for Fiscal Years 1995-1999 dated October 1994. The plan was updated on February 1996 for fiscal years 1996-2000 and is being forwarded for your information.

As a final note, the next RAB meeting will be held on October 17, 1996, at the General Smallwood Middle School from 7:00 p.m. until 9:00 p.m.

If you have any comments or questions, you may contact Mr. Shawn Jorgensen on (301) 743-6745/6746. In addition, you may FAX your comments/questions to (301) 743-4180 or submit them in writing to the address above, attention Code 046.

For those community members on the RAB, please sign the return postcard, enclosure (3), which states that you received this letter, and drop it in the mail. Once again, I would like to thank you for your participation on the RAB.

Sincerely,



SUSAN P. ADAMS
Head, Safety Department
By direction of the Commander

Encl:

- (1) Meeting Minutes from RAB Meeting of 18 Jul 96
- (2) DON Environmental Restoration Plan
for Fiscal Years 1996-2000
- (3) Return Postcard

Copy to:

RAB Members
EFACHES (Code 181) (w/o encl [2])

INSTALLATION RESTORATION PROGRAM



INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER
101 STRAUSS AVENUE
INDIAN HEAD, MARYLAND
20640-5035



RESTORATION ADVISORY BOARD (RAB) MEETING

Date of Meeting: July 18, 1996

Restoration Advisory Board (RAB) Member Participants:

Ms. Susan Adams (N)*	Ms. Donna Lynch (S)
Mr. Elmer Biles (C)	Mr. Dennis Orenshaw (F)
Ms. Patricia Haddon (L)	Mr. Shawn Phillips (N)
Mr. Vincent Hungerford (C)*	

RAB Members Not in Attendance:

Ms. Marsha Atlee-Harley (C)	Mr. Charles Ellison (C)
Ms. Kristen Burke (C)	Mr. Bob Foley (F)
Mr. Gary Davis (L)	Dr. Philip Giguere (C)
Mr. Stephen Elder (L)	

* RAB Co-Chair

Additional Attendees:

CDR R. M. Honey (N)	Mr. George Latulippe (K)
LCDR K. Slates (N)	Ms. Liz McIntyre (N)
Mr. Jeff Bossart (N)	Mr. Gordon Miller (K)
Ms. Sherry Deskins (N)	Mr. Rob Simcik (K)
Mr. Shawn Jorgensen (N)	Mr. Mark Yeaton (N,C)

C = Community Member
F = Federal Official
K = Contractor
L = Local Official
N = Navy Official
S = State Official

Major Issues Discussed/Accomplished:

1. Tour

A tour was conducted of the Indian Head Division, Naval Surface Warfare Center's Installation Restoration (IR) Sites 56 and 57. The tour strayed slightly from the tentative agenda by beginning with IR Site 57 and proceeding to IR Site 56. A visit to an archeological dig site (the Posey Site), which is located near IR Site 56, was planned but had to be abandoned due to thunder and lightning. A copy of the amended agenda for the tour is included in Attachment (A).

2. Meeting

Due to inclement weather, we met in Building 20 after visiting IR Sites 56 and 57. Mr. Jim Harmon from the Jefferson Patterson Park and Museum, who is conducting the dig at the Posey site, discussed the history of the site and showed us some artifacts that were excavated. Based on the findings to date, this site is one of the most significant in the State of Maryland.

Afterwards, Mr. Elmer Biles mentioned that the Federal Facilities Environmental Restoration Dialogue Committee Report has been finalized and suggested that RAB members read the report. The report represents a discussion on how to involve all stakeholders in the federal facilities cleanup program.

3. Conclusion

The meeting ended with Ms. Sue Adams stating that the next meeting will be held on Thursday, 17 October 1996, from 7:00 p.m. to 9:00 p.m. at the General Smallwood Middle School. The proposed topics to be discussed are included in Attachment (B).

INDIAN HEAD DIVISION,
NAVAL SURFACE WARFARE CENTER
INSTALLATION RESTORATION PROGRAM
RESTORATION ADVISORY BOARD (RAB) MEETING
AGENDA

July 18, 1996

- 6:00 - 6:10 ARRIVAL/WELCOME
- Ms. Susan P. Adams
 Indian Head Division, Naval Surface Warfare Center
 Director, Environmental Division
- 6:10 - 6:30 TOUR OF IR SITE 57
- Mr. Shawn Jorgensen
 Indian Head Division, Naval Surface Warfare Center
 IR Project Manager
- 6:30 - 7:00 TOUR OF IR SITE 56 REMOVAL ACTION
- Mr. Gordon Miller
 OHM (Removal Action Contractor)
 Project Manager
- 7:00 - 7:30 TOUR OF ARCHEOLOGICAL SITE 18CH281 (SITE 281)
- Mr. Jim Harmon
 Jefferson Patterson Park and Museum
 Archeological Investigator
- 7:30 - 8:00 COMMENTS, QUESTIONS, AND ANSWERS
- 8:00 ADJOURN

**TENTATIVE AGENDA FOR NEXT
RESTORATION ADVISORY BOARD
MEETING**

Thursday, October 17, 1996

- 1. Update of IR Site 56 (IW 87, Lead)
Removal Action**
- 2. Update on IR Site 57 (TCE)**
- 3. Discussion of Remedial Investigation/
Feasibility Study Work Plan**
- 4. Devolvement of Defense Environmental
Restoration Account (DERA) Funds**
- 5. Fiscal Year 1997 (FY97) Budget**

**DEPARTMENT OF THE NAVY
ENVIRONMENTAL RESTORATION PLAN
FOR FISCAL YEARS 1996-2000**

DEPARTMENT OF THE NAVY

Environmental Program



FEBRUARY 1996

**DEPARTMENT OF THE NAVY
ENVIRONMENTAL RESTORATION PLAN
FOR FISCAL YEARS 1996-2000**



FEBRUARY 1996

FOREWORD

The Department of the Navy is pleased to forward the Department of the Navy Environmental Restoration Plan for Fiscal Years 1996-2000. It is intended to chronicle the accomplishments made in cleaning up past hazardous waste disposal sites and provide a plan for achieving future restoration goals.

1995 brought significant changes in the way we plan to conduct the business of restoring our Navy and Marine Corps installations. As always, it is our goal to achieve cleanup of past hazardous waste sites in a prudent and cost effective manner. Coupled with that philosophy is a new strategy that stresses the use of risk management to prioritize cleanup actions within a framework of stable funding.

Formatting changes in this year's edition organize data into easy to use categories that allow the reader to quickly locate key information. The use of icons and mapboxes enhance the plan's readability. Progress and plans tables track each activity's cleanup efforts through FY 1995 and provide a roadmap for future cleanup actions over the next five years.

Consistent with previous reports, special emphasis is placed on installations included on the National Priorities List and for significant Base Realignment and Closure activities. Detailed narratives provide historical information for cleanup actions taken under the Comprehensive Environmental Response, Compensation and Liability Act, the Resource Conservation and Recovery Act and the Underground Storage Tank program.

Appendices list every Navy and Marine Corps installation by state, program and phase. These tables provide a snapshot of the Installation Restoration Program as of 30 September 1995 using information provided by Remedial Project Managers at each Naval Facilities Engineering Field Division and Activity.

It is hoped that you will find this edition of the five-year plan to be a useful asset in articulating the Department of the Navy's success in the environmental cleanup arena to installation personnel, regulators and the public. Widest possible distribution is encouraged.

EXECUTIVE SUMMARY

The Department of the Navy (DON) Environmental Restoration Plan for Fiscal Years (FY) 1996-2000 provides a comprehensive look at the DON's efforts and commitment to identify and assess potential areas of environmental contamination resulting from past disposal activities and spills and perform cleanup actions as appropriate.

The DON Environmental Restoration program was initiated in response to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Superfund Amendments and Reauthorization Act (SARA) of 1986. The passage of SARA brought Department of Defense (DOD) under the CERCLA umbrella with the creation of the Defense Environmental Restoration Program (DERP) funded by the Defense Environmental Restoration Account (DERA). The Installation Restoration Program (IRP) was established following the implementing guidance set forth in the National Oil and Hazardous Substances Contingency Plan (NCP) and guidance documents from the US Environmental Protection Agency (EPA). The NCP and the EPA set forth a procedure for identifying, investigating and cleaning up contaminated sites resulting from past hazardous waste disposals and spills. The most contaminated of the sites being addressed under CERCLA are put on the National Priorities List (NPL).

Along with CERCLA IRP sites, past disposal and spill areas identified under other environmental laws also qualify for DERA funding due to overlap in the laws. Under the Resource Conservation and Recovery Act (RCRA), a Corrective Action program identifies potential areas of contamination as Solid Waste Management Units (SWMUs) or as Underground Storage Tanks (USTs) sites. If these sites are the result of past disposal practices and past spills of hazardous wastes, DERA funding can be used to clean them up. Under the Base Realignment And Closure Acts (BRAC), sites that would normally qualify for DERA funding are funded out of a BRAC account and are still considered part of the Environmental Restoration program.

As of 30 September 1995, the DON had 4,288 sites in the Environmental Restoration program at 231 DON installations. Of these, 3,031 sites were in a study phase, 246 had a cleanup underway and 1,011 sites were considered Response Complete (RC) by the DON. Of the 4,288 sites, BRAC funding was used on 802 sites and DERA funds spent on 3,486 sites. During fiscal year 1995, DON spent \$405 million on the environmental restoration program. During FY92, the DON spent only 14% of its DERA funding on actual cleanups compared to FY95 where 59% of the funding was spent on cleanups. Congress recently established a new goal of using 80% of the DERA funds on actual site cleanup by FY98. Expected funding for the DON Environmental Restoration program is \$360 million in FY96. There are 42 DON installations listed on the NPL, five of which were added in FY95.

Due to reductions in funding levels in FY95, the DON placed greater emphasis on innovative approaches to program management with an overall goal to reduce the risk presented by the DON contaminated sites. A second goal was to accomplish cleanups quicker, especially at closing bases to accelerate the return of land to local communities for reuse. A comprehensive effort to evaluate and accurately portray program data and costs was undertaken. A Relative Risk Site Evaluation Model was used to rank DON sites to determine a site's relative risk. Relative risk ranking is a key element in the risk management prioritization process. In general, this will allow sites posing a greater relative risk to be cleaned up sooner. Of the 3,277 active DON sites, 1,382 were ranked high, 621 were ranked medium and 715 were ranked low relative risk. The remaining 559 sites will be ranked by the end of FY97.

By making use of the removal action and interim remedial action processes outlined in the NCP, the DON has been able to take steps to reduce the risk associated with contaminated sites. Increased use of innovative technologies and efforts to transfer these technologies to the field has promoted quicker and less expensive ways to clean up sites. During the summer of FY95, DON increased efforts to work with regulators and other affected stakeholders to structure a national cleanup program within existing fiscal constraints. A new approach to recently negotiated legal agreements uses risk as the primary factor to determine priorities. Incorporation of Site Management Plans has allowed for adjustments in schedules to accommodate relative risk evaluations and funding levels.

CHAPTER 1

OVERVIEW OF DEPARTMENT OF THE NAVY ENVIRONMENTAL RESTORATION PLAN

This Department of the Navy (DON) Environmental Restoration Plan documents cleanup of past hazardous waste sites and projects cleanup goals at DON installations over the next five years. The DON installations include both Navy and Marine Corps facilities within the United States and its territories. This plan covers the cleanup of contaminated sites which are the result of past spills and releases of hazardous substances. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Superfund Amendments and Reauthorization Act (SARA) and the Resource Conservation and Recovery Act (RCRA) are the primary laws which govern the Environmental Restoration Program. The ultimate goal of the DON's Environmental Restoration Program is to cleanup past spill and disposal sites in order to protect human health and the environment.

Congress established the Defense Environmental Restoration Account (DERA) to address the investigation and cleanup of past hazardous waste sites at active bases. This Plan covers the investigation and cleanup of sites that qualify for DERA funding. It also includes investigation and cleanup activity at closing installations as a result of Base Realignment and Closure (BRAC) legislation. This Plan does not address cleanup of oil spills and other similar actions which are the result of current operations at DON installations since DERA funding was not intended to be used for such cleanups.

This Plan provides the current status and projects expected progress in achieving necessary cleanups over the next five years. It also identifies future resources needed to complete all cleanup actions. DON revises this Plan annually to reflect progress and changes that have occurred in the planned actions at each installation. The data used in this edition reflects the status of the cleanup program at installations as of 30 September 1995.

THE PLAN CONTAINS THE FOLLOWING

- Chapter 1 — Overview of the Department of the Navy Environmental Restoration Plan
- Chapter 2 — History and Implementation of the Environmental Restoration Program
- Chapter 3 — Environmental Restoration Program Funding Levels and Status
- Chapter 4 — Environmental Restoration Program Management Initiatives
- Chapter 5 — Detailed information concerning the cleanup program at DON installations
- Appendices — Tables of summary site counts and information concerning types of sites, installations with no sites, laws and regulations applicable to the Environmental Restoration Program, acronyms and a glossary.
- Indices — Installation information indexed by major claimant, Engineering Field Division, National Priorities List status, BRAC status (if applicable), and alphabetical by location name.

CHAPTER 2

HISTORY AND IMPLEMENTATION OF THE ENVIRONMENTAL RESTORATION PROGRAM

2.1 HISTORY

The DON/DOD cleanup program began with the passage of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). In the early 1980's, the DON solicited information from each Navy and Marine Corps installation about activities conducted on their base. Of particular interest were industrial facilities, disposal areas, landfills, past operations, drinking water wells and other practices that could have resulted in hazardous waste disposal sites. After careful evaluation of the data, DON recommended 79 installations for further study.

At the inception of the DON cleanup program, CERCLA did not specifically apply to federal facilities. However, the DON intended to become a good steward of the environment. This led to the establishment of a similar, but slightly varied program called the Naval Assessment and Control of Installation Pollutants (NACIP). The DON conducted Initial Assessment Studies (IASs), Verification Studies, Confirmation Studies and Corrective Action Measures as part of the NACIP program. The Naval Facilities Engineering Service Center, formerly the Naval Energy and Environmental Support Activity, completed IASs at the 79 installations by 1984. Remedial Project Managers at Naval Facilities Engineering Command Engineering Field Divisions (EFDs) then conducted follow on phases of the NACIP.

Passage of the Superfund Amendments and Reauthorization Act (SARA) in 1986 brought all federal facilities under the umbrella of the CERCLA program. SARA required the DON to follow U.S. Environmental Protection Agency (EPA) rules and regulations and to have a program that was procedurally and substantively equivalent to the EPA's Superfund program. SARA also formalized the Defense Environmental Restoration Program (DERP) and provided separate funding to DOD for the cleanup program. Currently, Congress provides this separate funding, the Defense Environmental Restoration Account (DERA), directly to the DOD. The DERA funds are then apportioned by DOD among the services and defense agencies responsible for executing the cleanup program. Beginning in FY97, this program will devolve to each service.

Following passage of SARA, DOD and the services adopted the EPA's Superfund terminology. Building on information contained in the IASs, the DON initiated studies to confirm the presence and extent of contamination at all Navy and Marine Corps installations. The DON now uses EPA's Superfund guidance to conduct Preliminary Assessments/Site Investigations, Remedial Investigation/Feasibility Studies and Remedial Designs/Remedial Actions as necessary to determine hazardous waste site cleanup requirements.

In addition to CERCLA cleanup actions, DON uses DERA funding to clean up sites under Resource Conservation and Recovery Act (RCRA) Corrective Action and RCRA Underground Storage Tank authority when these sites qualify for DERA funding. Since the program began, DERA funding has increased from \$21 million in FY84 and peaked at \$407 million in FY94. FY95 funding stands at \$405 million. The DON is well along in the study phase and is transitioning to a program marked by an increasing level of funding being dedicated to actual cleanups. Since FY91, the level of funding attributed to actual cleanups has risen from 13% to 59% in FY95.

2.2 IMPLEMENTATION

The Secretary of Defense is charged by the Superfund Amendments and Reauthorization Act (SARA) of 1986 to carry out a program of environmental restoration at facilities under the jurisdiction of the Secretary. This program is known as the Defense Environmental Restoration Program (DERP). It provides centralized management for the cleanup of past contamination from toxic and hazardous substances, low-level radioactive materials and petroleum, oil and lubricants (POL) at DOD sites consistent with the provisions of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by SARA, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), and Executive Order 12580, Superfund Implementation. The DERP is funded by a special transfer account, the Defense Environmental Restoration Account (DERA). The Deputy Under Secretary of Defense for Environmental Security (DUSD(ES)) centrally manages the account, develops and defends the budget, and allocates funds among the Army, Navy, Air Force and the Defense Agencies. Beginning with FY97 these responsibilities will devolve to the individual services.

In addition, the Environmental Restoration Program encompasses cleanup of past hazardous waste disposal sites at Base Realignment and Closure (BRAC) installations. Cleanup at these activities differs only in its funding through a separate BRAC account. To date, DOD has conducted four rounds of base closures (1988, 1991, 1993 and 1995).

GOALS OF THE ENVIRONMENTAL RESTORATION PROGRAM ARE TO

1. Ensure full environmental compliance with Federal, state and local requirements pertaining to the cleanup of contamination from past hazardous waste disposal practices.
2. Reduce risk by taking immediate action to eliminate human exposure to contamination and remove or contain contamination that poses imminent threats.
3. Score individual sites on installations using a Relative Risk Site Evaluation Model in order to identify, on a national basis, those sites that pose the greatest risk to human health and the environment.
4. Develop partnerships with EPA, state and local regulatory agencies, keeping them informed of cleanup activities and soliciting their comments and recommendations, as appropriate, throughout the cleanup process.
5. Involve the local community in the DERP program. Establish Restoration Advisory Boards (RABs) at all Navy facilities with an active Environmental Restoration Program and at Marine Corps installations where there is sufficient, sustained local interest. Form RABs at all BRAC installations. Encourage stakeholder participation by making information available in a timely manner, providing opportunities for public comment, and considering all comments in the decision making process.
6. Expedite the cleanup process and demonstrate a bias for action.
 - Remove high concentration sources of contamination.
 - Take stabilization or containment measures, as necessary.
 - Take interim action where appropriate.
7. Consider planned land use in developing cleanup strategies.
8. Ensure that actions necessary to protect human health and the environment are taken prior to property sale or other transfer in accordance with CERCLA, Section 120(h) as amended by the Community Environmental Response Facilitation Act of 1992 (P.L. 102-425) and DOD policy.

The Department of the Navy (DON) has been delegated responsibility to carry out the restoration goals prescribed by Deputy Under Secretary of Defense (Environmental Security) on property it manages. The DON's environmental restoration efforts to assess, characterize, and clean up or control past contamination is centrally managed and consists of three separate areas: CERCLA Installation Restoration, RCRA Corrective Actions, and RCRA Underground Storage Tank (UST) Cleanups. These regulatory regimes apply to both active and BRAC installations.

2.3 INSTALLATION RESTORATION PROGRAM

The Installation Restoration Program (IRP) is the primary component of the DERP and is DOD's program for meeting its responsibilities under CERCLA. The purpose of the IRP is to identify, quantify and clean up contamination at installations (including areas outside the installation where contamination has migrated), when necessary. The focus of the program is on cleanup of contamination associated with past hazardous waste disposal activities to ensure that threats to public health and the environmental are eliminated and that our natural resources are restored for future use. This includes demonstration of innovative cleanup technologies.

All sites on DON controlled property within the United States, its territories or possessions are included in the Installation Restoration Program. The IRP consists of a series of phases to identify, characterize and clean up hazardous waste sites at Navy and Marine Corps installations. In broad terms, the phases may be grouped into two general categories, study and cleanup. The study phases are Preliminary Assessment (PA), Site Inspection (SI), and Remedial Investigation/Feasibility Study (RI/FS). The cleanup phase includes Remedial Design (RD) and Remedial Action (RA). It also encompasses Interim Remedial/Removal Actions (IRAs).

2.3.1 PRELIMINARY ASSESSMENT

The installation restoration process normally begins with a Preliminary Assessment (PA) which is accomplished by the Naval Facilities Engineering Command (NAVFACENGCOM). The purpose is to identify potentially contaminated sites at an installation. This step involves the collection and review of readily available, existing information on past hazardous waste disposal operations or hazardous material spills at Navy or Marine Corps installations. The information is studied to determine the potential for the presence of hazardous substances. It considers pathways of exposure and possible receptors, the source, nature and threat of any release, the magnitude of the potential threat and whether or not removal or treatment is necessary.

2.3.2 SITE INSPECTION

A Site Inspection (SI) is performed for sites identified as potentially contaminated in the PA. The purpose is to augment the data collected in the PA and to generate, if necessary, sampling and other field data to determine if further action or investigation is warranted. It consists of an on-site investigation to determine whether there is a release or potential release and the nature of the associated threats.

Information from the PA and SI are used by the U. S. Environmental Protection Agency (EPA) to determine if an installation should be proposed for inclusion on the National Priorities List (NPL). The NPL is a list of sites nationwide, both public and private, that pose the greatest threat to human health or the environment. EPA makes this determination through their Hazard Ranking System (HRS) which assesses the information provided on a site and calculates an HRS score. An HRS score of 28.5 or greater qualifies the site for the NPL. Within DON, NPL status applies to the entire installation, unless the EPA and the DON concur that an area of the installation is not included in the listing. The DON, in accordance with DOD policy, enters into a Federal Facilities Agreement (FFA) with the cognizant EPA region as soon as possible after the installation is listed on the NPL. In many cases, states in which NPL installations are located are third parties to the FFA. The FFA specifies the roles and responsibilities of the regulatory agencies and the DON. It also establishes milestones for future cleanup actions.

2.3.3 REMEDIAL INVESTIGATION/FEASIBILITY STUDY

If a site is verified as contaminated in the SI, it then proceeds to a Remedial Investigation/Feasibility Study (RI/FS). The purpose of the RI/FS is to determine the nature and extent of the threat presented by a release, and where appropriate, to evaluate proposed remedies. The RI is a detailed study that involves a variety of investigative sampling and analytical activities, including installation of monitoring wells, and geophysical studies. It also includes the collection of soil, air, water and other samples to determine contaminant characteristics, hazards and routes of exposure. When appropriate, a Human Health Risk Assessment and an Ecological Risk Assessment are conducted according to EPA guidelines. The FS uses information generated by the RI to identify potential cleanup actions. During the FS, a number of potential remedial alternatives are developed and screened to evaluate their ability to meet a range of factors including technical and regulatory requirements. After consideration of public and regulatory agency comments, the RI/FS is concluded by selection of the remedy, which may also include a recommendation of no further action. The selection is documented by a Record of Decision (ROD) for NPL sites and by a Decision Document for sites not listed on the NPL.

2.3.4 REMEDIAL DESIGN

A site identified in the RI/FS as requiring a cleanup action will then move into the Remedial Design (RD) phase. The goal of the RD is to prepare all technical drawings and specifications needed to implement the selected cleanup action. The Remedial Design begins the cleanup phase.

2.3.5 INTERIM REMEDIAL ACTIONS, REMOVALS, REMEDIAL ACTION

Interim Remedial Actions (IRAs) and removal actions may be undertaken at any point during the investigation or cleanup of a site to respond to a release that may present an imminent and substantial threat to human health or the environment, to reduce the overall risk of a site or to stabilize a site until the final cleanup action can be completed. On an increasing basis, the DON is utilizing IRAs as a tool to quickly respond to site contamination, reduce study costs and accelerate the cleanup process.

The Remedial Action (RA) is the actual construction, operation and implementation of the selected final cleanup action. In some cases, the final remedial action may include long term operation and monitoring of treatment systems. In those cases, the RA is considered complete when the selected remedy is in place (RIP) and is functioning as designed.

The DON's overall goal for FY95 was to allocate at least 60% of its DERA budget on cleanups.

2.3.6 RESPONSE COMPLETE

When the DON has completed all the necessary study and cleanup actions, and the DON considers all work completed, the site is designated Response Complete (RC). At this point, regulatory concurrence that all work is complete is sought from the appropriate agencies.

2.3.7 SITE CLOSEOUT

When no further actions under the IRP are considered by the DON to be appropriate because the site does not pose a threat to human health or the environment and consent from the regulators is obtained, the site is designated Site Close Out (SCO). At NPL installations, it is necessary for the EPA to concur with this decision. At non-NPL installations, state concurrence with SCO may be required, depending on the individual state policy. A site may be closed out at the end of the PA, SI, RI/FS or RA.

2.4 RESOURCE CONSERVATION AND RECOVERY ACT CORRECTIVE ACTIONS

The Resource Conservation and Recovery Act (RCRA) of 1976, as amended by the Hazardous and Solid Waste Amendments (HSWA) of 1984, established a national strategy for managing ongoing solid and hazardous waste operations, as well as corrective action requirements for cleaning up hazardous waste releases. RCRA section 3004(u) requires that permits issued by the Administrator of the EPA, or an authorized state, require corrective actions for all releases of hazardous waste or contents from any solid waste management units (SWMU) at a treatment, storage or disposal TSD facility. The EPA may issue an order requiring corrective action under RCRA section 3008(h) when an interim status facility is not seeking a RCRA permit or the issuance of a permit is not expected in the near future.

Investigation and cleanup of site contamination at SWMUs required by sections 3004(u), 3004(v) and 3008(h) of RCRA are eligible for DERA funding when these corrective actions address cleanup of historic contamination and are viewed as installation restoration. Closure or corrective actions at regulated TSD units are not eligible for DERA funding. Facility construction and improvements required under RCRA are not DERA eligible. EPA identifies potential SWMUs by conducting RCRA Facility Assessments (RFAs) at Navy and Marine Corps installations.

RCRA Corrective Actions at an installation may include containment, stabilization or removal of the source of the contamination; assessment of health risks associated with contamination; identification and evaluation of potential corrective actions; design and construction of the selected corrective action, and implementation of the corrective action. The RCRA corrective action process is very similar to the IRP response process.

2.5 UNDERGROUND STORAGE TANK CLEANUPS

Subtitle I of the Hazardous and Solid Waste Amendments (HSWA) of 1984 established a national regulatory program for managing Underground Storage Tanks (USTs) containing hazardous material, including CERCLA hazardous substances and petroleum products. Hazardous wastes stored in USTs were already regulated under RCRA. Although EPA was directed to promulgate UST regulations, the program was designed to be administered by states. Both state and local governments were permitted to establish regulatory programs with more stringent standards than those established by the EPA.

USTs are generally defined as all tanks and attached piping containing regulated substances in which the tank volume (including piping) is 10 percent or more beneath the surface of the ground. Navy policy requires installations with USTs to have a UST management plan which contains the following information:

- Listing of all USTs at the installation.
- Regulatory requirements for each UST.
- A plan of action for achieving and maintaining compliance through monitoring, removal, repair, replacement and remediation of UST systems.

The Marine Corps policy requires installations to maintain a tank inventory and develop a tank management strategy. The tank management strategy requires installations to look beyond compliance tasks and consider a comprehensive approach to long term UST storage needs.

Studies conducted to locate USTs not in use since January 1984, activities to determine whether a release has occurred from these abandoned tanks and response to the past release are eligible for DERA funding as environmental restoration projects. Also eligible are responses to releases from in-service tanks discovered during initial integrity testing (leak detection monitoring) where testing was conducted prior to the regulatory date of December 22, 1993. DERA eligibility only applies to the cleanup of releases, and does not include replacing or repairing leaking tanks.

Individual USTs are not necessarily identified as a separate site. Where USTs are physically located together, as is often the case with a fuel farm, the tanks are grouped together and considered as one site.

2.6 REGULATORY PROGRAMS COMPARISON

Although each of the three DERA programs, CERCLA IRP, RCRA Corrective Action and RCRA Underground Storage Tank Cleanups, essentially follow the same steps, each program uses slightly different terminology. The following figure compares the steps taken and the terminology used for each regulatory regime.

RCRA CORRECTIVE ACTION	CERCLA	RCRA UNDERGROUND STORAGE TANKS
RCRA Facility Assessment (RFA) <ul style="list-style-type: none"> • Preliminary Review • Visual Site Inspection (VSI) • Sampling Visit (SV) 	Preliminary Assessment/ Site Investigation (PA/SI) <ul style="list-style-type: none"> • Preliminary Assessment • Site Investigation • HRS Scoring 	Initial Site Characterization (ISC) <ul style="list-style-type: none"> • Tank Inventory • Tank Testing • Site Characterization
Interim Measures <ul style="list-style-type: none"> • Short-term Remediation • Temporary Fixes • Alternate Water Supplies 	Removal Action/Interim Remedial Actions (RA/IRA) <ul style="list-style-type: none"> • Emergency and Time Critical Removals • Planned Removals (> 6 months) • Interim Actions to Reduce Site Risk 	Interim Remedial Measures (IRM) <ul style="list-style-type: none"> • Interim Actions to Reduce Risk • Alternate Water Supplies
RCRA Facility Investigation (RFI) <ul style="list-style-type: none"> • Background Data Review • Environmental Setting Investigation • Sources Characterization • Contamination Characterization • Potential Receptors Characterization 	Remedial Investigation (RI) <ul style="list-style-type: none"> • Site Specific Data Collection • Source Characterization • Contamination Characterization • Waste Mixtures, Media Interface Zones • Hydrogeological and Climate Factors • Characterization of Affected Media • Potential Routes of Exposure and Risk Assessment • Extent of Migration 	Investigation (INV) <ul style="list-style-type: none"> • Groundwater wells affected • Free product recovery required • Contaminated soils in contact with groundwater • Potential effects on nearby surface and groundwater resources
Corrective Measures Study (CMS) <ul style="list-style-type: none"> • Identify and Develop Alternatives • Evaluate Alternatives • Justify & Recommend Corrective Measure 	Feasibility Study (FS) <ul style="list-style-type: none"> • Define Objectives & Nature of Response • Develop Alternatives • Conduct Detailed Analysis of Alternatives • Treatability Studies 	Corrective Action Plan (CAP) <ul style="list-style-type: none"> • Remedial Investigation Plan and Implementation - Site specific Data Collection - Contaminant Characterization - Characterization of Affected Media - Extent of Migration • Corrective Action Plan
Remedy Selection <ul style="list-style-type: none"> • Remedy that Abates Threat to Human Health and the Environment 	Remedy Selection <ul style="list-style-type: none"> • Select a Remedy that: <ul style="list-style-type: none"> - Protects Human Health & Environment - Attains Federal & State ARARs - Is Cost Effective - Utilizes Permanent Solutions/Resource Recovery - Reduces Toxicity, Mobility or Volume • Record of Decision, Decision Document 	Remedy Selection <ul style="list-style-type: none"> • Remedy that will adequately protect human health, safety and the environment
Design (DES) <ul style="list-style-type: none"> • Technical design of selected remedy • Specific to site's unique characteristics • Construction requirements 	Remedial Design (RD) <ul style="list-style-type: none"> • Technical design of selected remedy • Specific to site's unique characteristics • Construction requirements 	Design (DES) <ul style="list-style-type: none"> • Technical design of selected remedy • Specific to site's unique characteristics • Construction requirements
Corrective Measure Implementation (CMI) <ul style="list-style-type: none"> • Develop Implementation Plan, Program Plan & Community Relations Plan • Construction and Implementation 	Remedial Action (RA) <ul style="list-style-type: none"> • Perform Remedial Action • Perform Operations & Maintenance • Post Closure Monitoring 	Implementation (IMP) <ul style="list-style-type: none"> • Implement Corrective Action Plan

2.7 BASE REALIGNMENT AND CLOSURE ACTS OF 1988 AND 1990

Actual environmental restoration work at installations covered by each of the four rounds of base closures is conducted in a similar manner to cleanups at active installations with two major distinctions; 1) cleanup is not funded from DERA, and 2) cleanup decisions are based on economic reuse considerations as well as risk.

The Base Realignment and Closure Act of 1988 (PL 100-526) (BRAC I) and the Defense Base Closure and Realignment Act of 1990 (PL 101-510) (BRAC II, BRAC III and BRAC IV) required the environmental restoration efforts at bases being closed or realigned to be funded from a separate BRAC account. It was the intent of Congress that closing bases would not have to compete for cleanup funds with active installations. It also provides an impetus for quicker cleanup and turnover of land to the public sector for economic reuse.

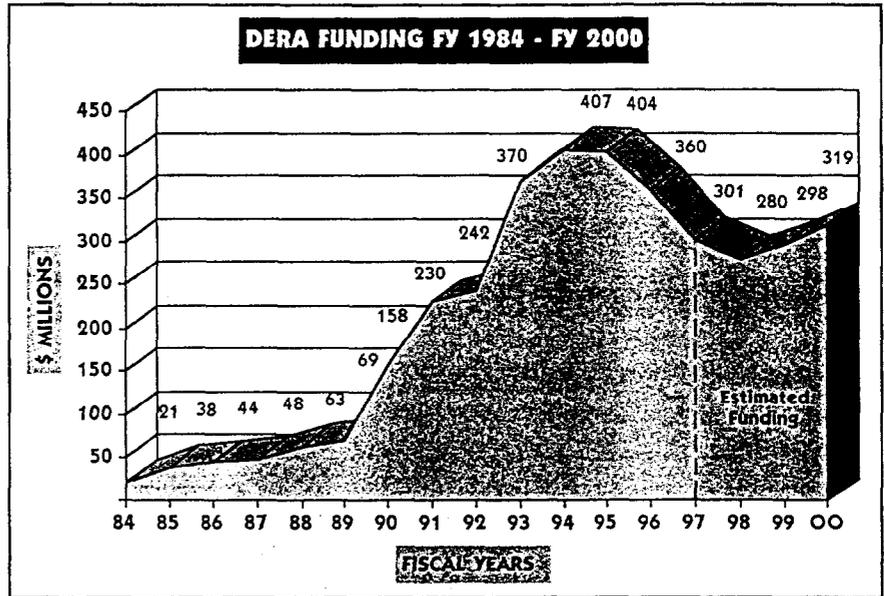
In July 1993, the President announced a five-part program to speed economic recovery at communities where military bases are slated to close. Closing bases have been directed to establish a BRAC Cleanup Team (BCT) at each activity where property is available for transfer to the community. The BCT is empowered with the authority, responsibility and accountability for environmental cleanup programs at these installations, with the emphasis on taking necessary actions to facilitate reuse and redevelopment. The DON is working closely with regulators to use innovative technologies and management approaches that will allow bases to be cleaned up even earlier than originally planned.

CHAPTER 3 ENVIRONMENTAL RESTORATION PROGRAM FUNDING LEVELS AND STATUS

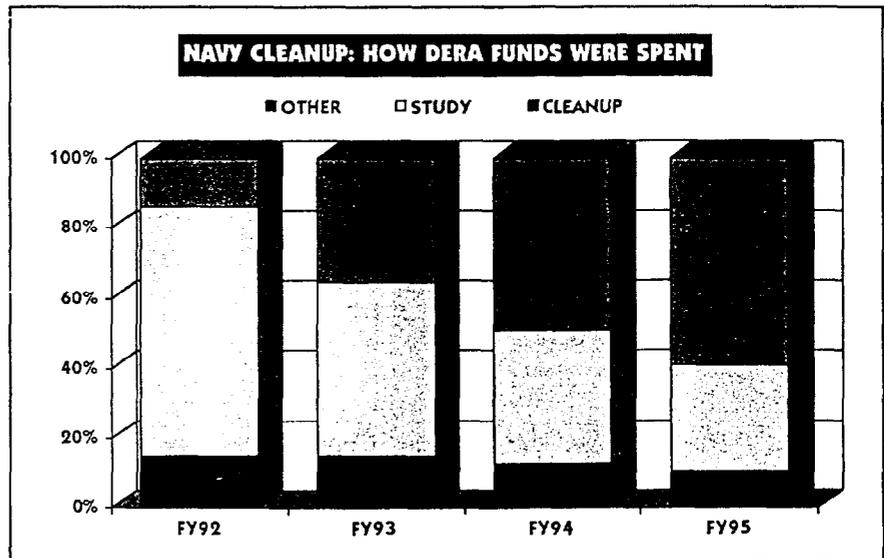
This section provides Environmental Restoration Program statistics and a picture of the cleanup program. Graphic displays show funding trends and site demographics. For purposes of this discussion, BRAC IV site information is shown under DERA since they were funded by DERA during FY95.

3-1 FUNDING

Since 1984, over \$2.0 billion in Defense Environmental Restoration Account (DERA) funding has been spent identifying, assessing and cleaning up past hazardous waste disposal sites at Navy and Marine Corps installations.

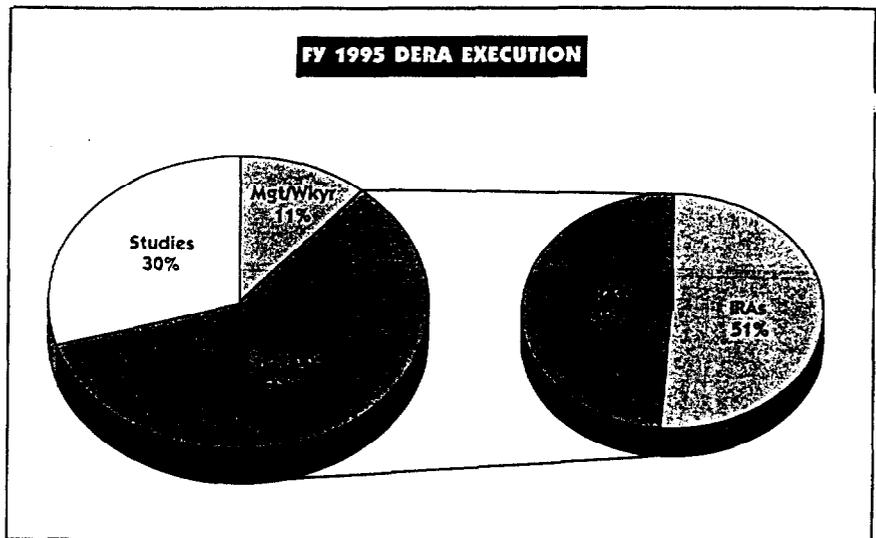


During the program's early years, the Department of the Navy (DON) spent most of the DERA funding on studies to locate sites and characterize the nature and extent of contamination. Over the last four years, increasing emphasis has been placed on accomplishing cleanups. From FY92 through FY95, DON has made steady progress in meeting this goal. During FY92, the share of DERA funding attributed to cleanups was 14%. In FY95, it has jumped to 59%. The FY96 DON goal is to spend 60% of DERA on cleanups. In the FY96 Defense Authorization Act, Congress established a goal that would require 80% of program funding to be used for actual cleanups beginning in FY98.



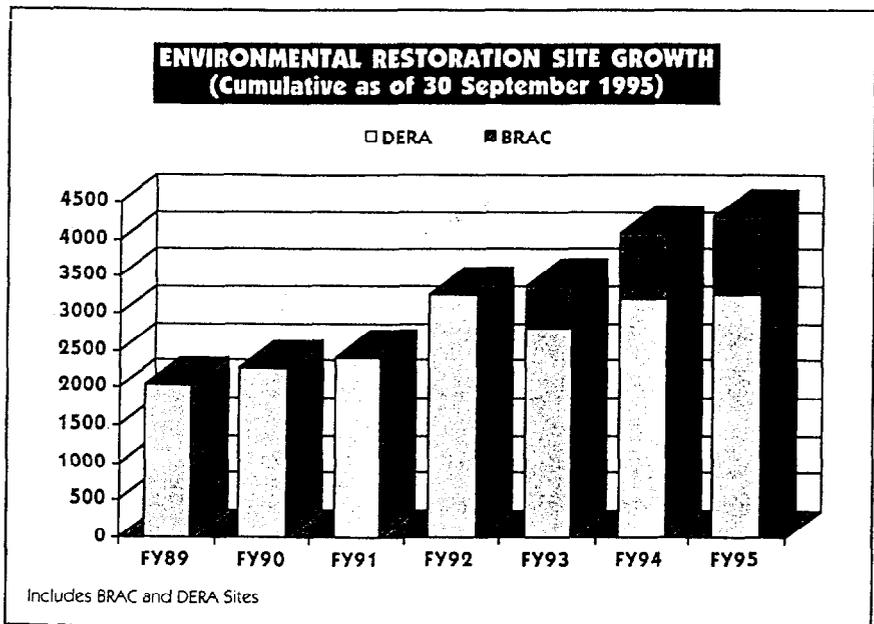
In February 1995, Congress rescinded \$250 million from the total FY95 DOD-wide DERA program. DON's share of this cut was \$65 million. DON employed a risk management strategy to adjust its FY95 cleanup program to meet these lower funding levels, and at the same time, ensure that the most highly contaminated sites with the greatest potential for harm to human health and the environment were addressed first.

A closer look at FY95 DERA execution shows the split between studies, cleanups and program administration costs (management/workyears). Of the DERA funds spent on cleanups, 51% represents Interim Remedial Actions (IRAs). Increased use of IRAs and removals help protect human health and the environment, accomplish cleanups sooner and reduce study costs.



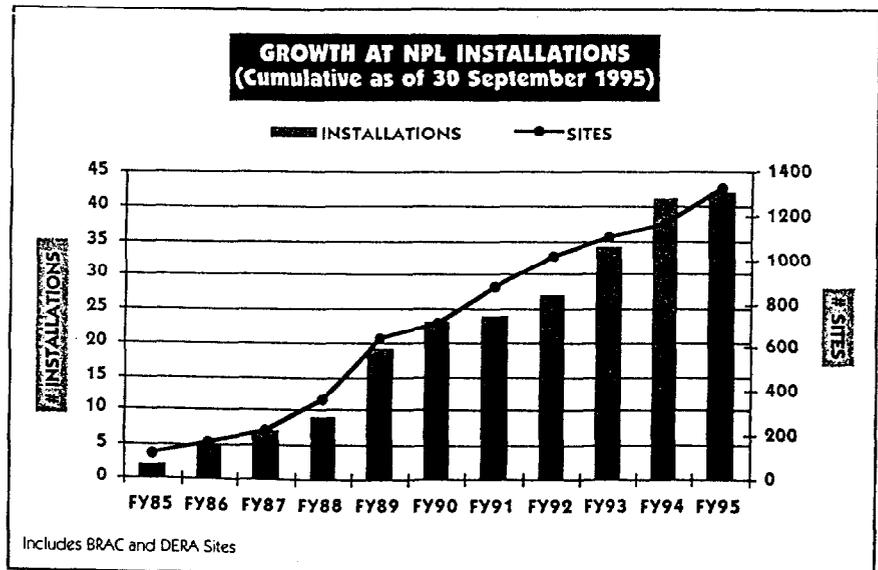
3.2 SITE STATUS

The size of the cleanup program has grown dramatically, nearly doubling since FY89.

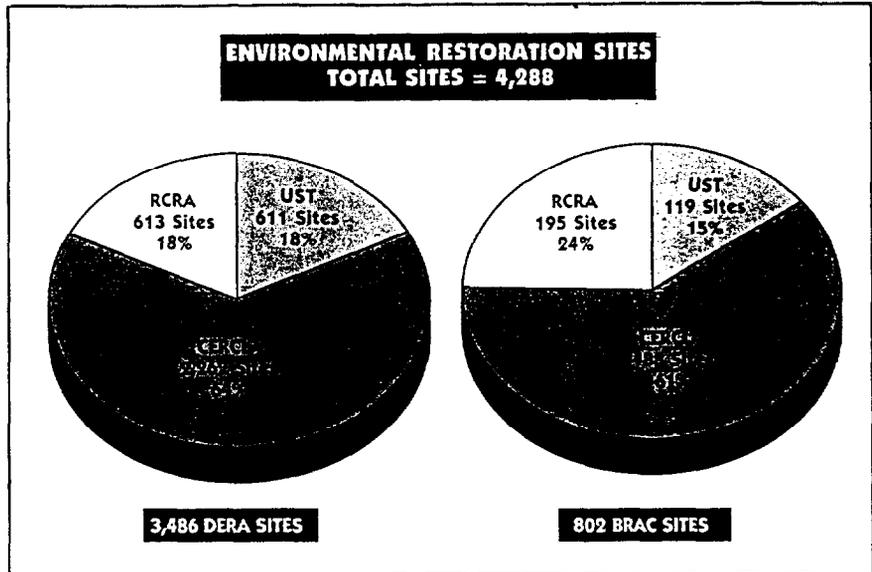


Currently there are 42 DON installations with 1,320 sites on the U.S. Environmental Protection Agency's National Priorities List (NPL). By comparison, in FY90, only 23 DON installations with 709 sites were on the NPL. Growth in the number of NPL installations is expected to stabilize at 2-3 installations per year over the next five years. Of the 42 NPL installations, 27 have a signed Federal Facilities Agreement (FFA).

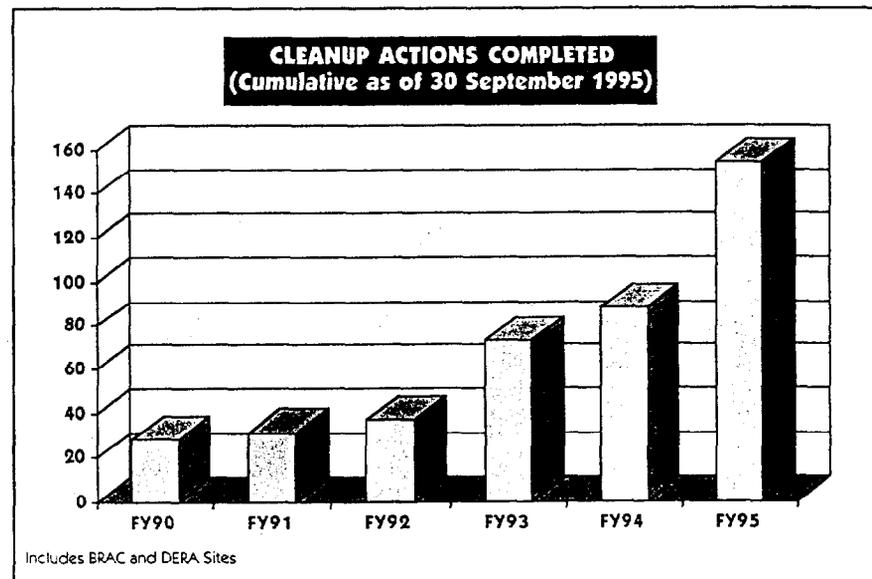
BRAC = 6 Installations 147 Sites
 DERA = 36 Installations 1,173 Sites



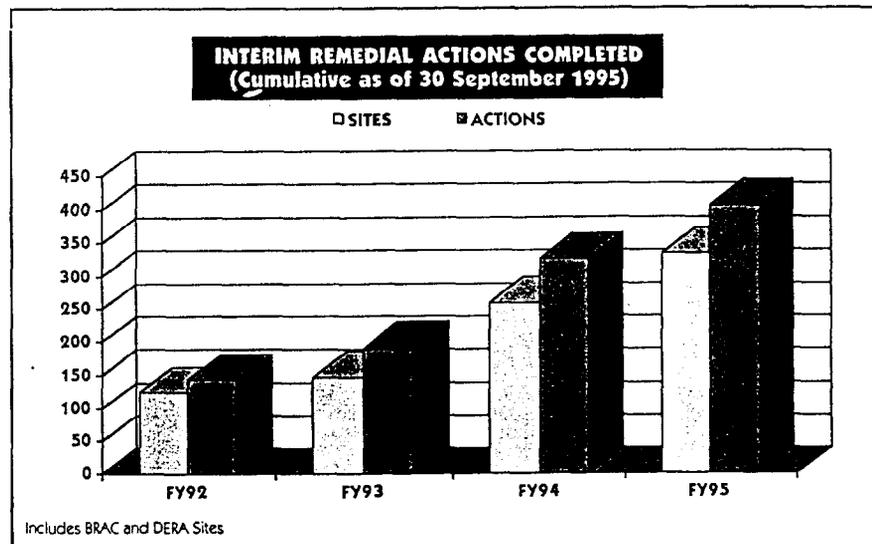
As of 30 September 1995, there are 4,288 sites in the cleanup program; 3,486 DERA and 802 BRAC. This chart shows a breakout between DERA and BRAC funded sites by each of the three regulatory regimes that govern cleanups; Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Resource Conservation and Recovery Act (RCRA) and the Underground Storage Tank (UST) component of RCRA.



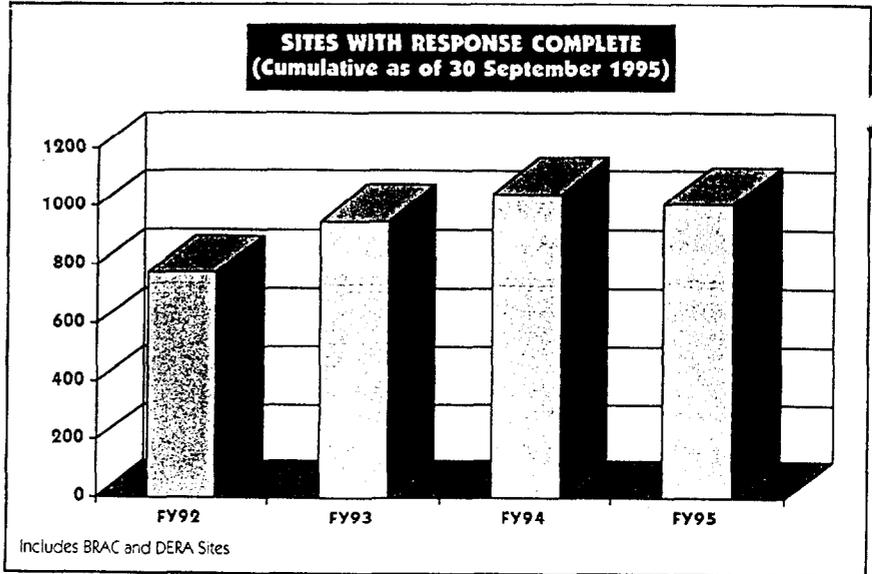
Site cleanup is comprised of two components: Remedial Actions (RAs) and Interim Remedial Actions (IRAs). Remedial Actions represent final solutions to site contamination. Once the RA is completed, no further cleanup action at a site is planned. Remedial Actions have been completed for 154 sites.



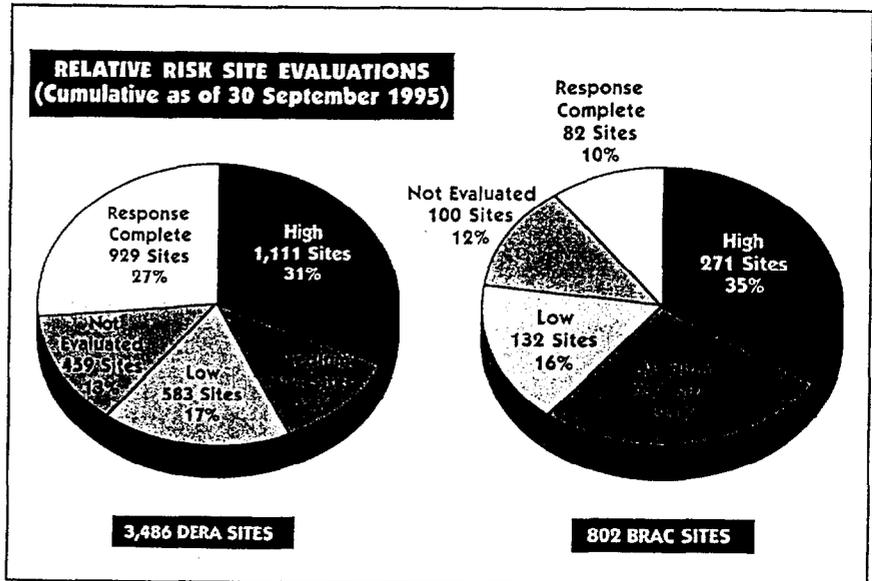
Interim Remedial Actions are frequently taken while a site is still in the study phase to reduce risk, stabilize a site and proceed to cleanup quickly. DON's focus on increased use of IRAs is shown here. By FY95, DON had completed 405 Interim Remedial Actions at 334 sites.



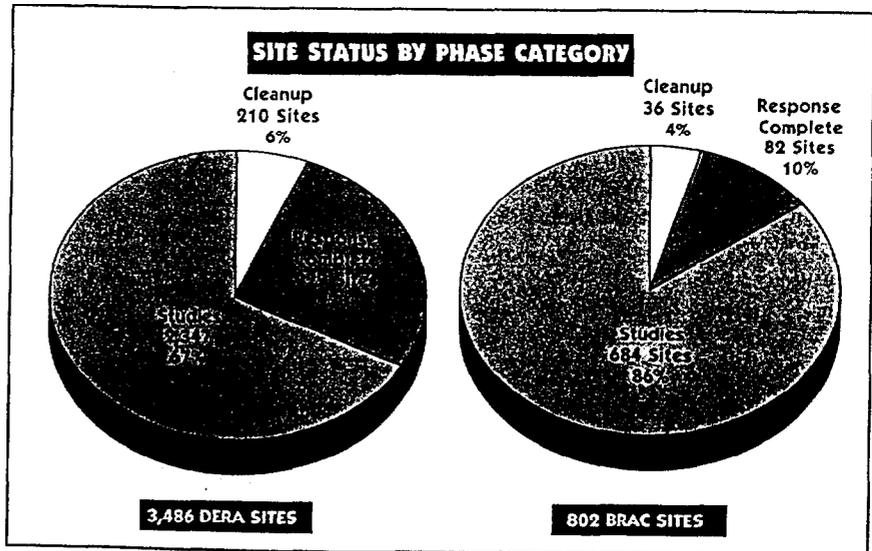
In addition to Remedial Actions that move sites to the Response Complete (RC) category, DON evaluates and determines that many sites require no further action during the study phase. Responses are now complete at 1,011 sites, of which 901 are the result of no further action decisions and 110 are the result of completed cleanup actions.



During FY95 DON ranked DERA and BRAC sites using the DOD Relative Risk Site Evaluation Model. The results are shown here. Sites without sufficient data to run the model were categorized as "not evaluated". Sites that are response complete do not have a relative risk rank.



Sites are divided into three phase categories: studies, cleanup and response complete.



The DON has an aggressive program to cleanup past hazardous waste disposal sites at both active and BRAC installations. During the next five years, DON expects a marked improvement in the number of sites achieving response complete status.

CHAPTER 4

ENVIRONMENTAL RESTORATION PROGRAM MANAGEMENT INITIATIVES

FY95 marked significant changes in the DON cleanup program. DON placed a greater emphasis on innovative approaches to program management with an overall goal to reduce risk, accomplish quicker cleanups and, at closing bases, accelerate the return of land to local communities for economic reuse and redevelopment. More than ever before, communities surrounding Navy and Marine Corps installations are taking an active interest in the DON environmental restoration program. The addition of 5 new installations to the U.S. Environmental Protection Agency's (EPA) National Priorities List (NPL) resulted in increased regulatory oversight. Clearly, the way ahead cannot be business as usual. In response to these challenges, the DON developed a number of new program management initiatives in FY95.

4.1 DATA ELEMENTS UPDATE

In the spring of 1995, representatives from the Naval Facilities Engineering Command Headquarters and the Naval Facilities Engineering Service Center visited Remedial Project Managers located at the Naval Facilities Engineering Field Divisions/Activities. The purpose of the visit was to conduct a detailed review and update of the site data contained in DON's master site data base (DSERTS). Management controls were instituted to enhance the accuracy of site data in the database and to promote integration of site data contained in various DON databases. However, it was acknowledged that management controls would not be sufficient to ensure integration of various databases. An effort was launched to develop a database integration system (NORM). NORM will link site data with relative risk and financial databases.

4.2 DON ENVIRONMENTAL CLEANUP ASSESSMENT

On 31 August 1995, the Naval Facilities Engineering Command completed an assessment of the DON portion of the Defense Environmental Restoration Program for the FY97 Future Years Defense Plan (FYDP), as directed by the Assistant Secretary of the Navy (Installations and Environment). The purpose of the assessment was to determine DON's ability to structure a national environmental restoration program at the level of funding contained in the FY97 FYDP, by entering into discussion with regulators and other affected and concerned stakeholders.

The Naval Facilities Engineering Command contacted 8 of the 10 U.S. Environmental Protection Agency (EPA) regions, 14 states and the territory of Guam. Based on feedback from the regulators, the Naval Facilities Engineering Command determined that it was not possible for the DON to structure a national program within the FY97 FYDP funding levels and receive regulator concurrence.

The assessment identified four significant barriers to restructuring the DON cleanup program:

- Identification of total requirements to Congress - regulators felt that the Navy has not adequately identified its full requirements to Congress. Without such identification, regulators are reluctant to renegotiate agreements or adjust schedules.
- Policy to only fund legal agreements - regulators voiced the concern that the program needs to address all high risk sites rather than only those identified in legal agreements.
- Regulators' perception that Navy is not bringing anything to the negotiations - regulators expect that the DON will provide something in return for their relaxation of requirements in existing agreements, otherwise the regulators will be reluctant to renegotiate existing agreements.
- Defense State Memorandum Of Agreement (DSMOA) funding concerns - proposed reductions in the level of DSMOA funding provided to states for their assistance in reviewing and commenting on proposed cleanup actions is of concern to the regulators. If funding is reduced, they will not be able to provide sufficient oversight.

The assessment concluded that based on the DON's current cooperative relationship with the regulators and the DON's willingness to communicate regulator's concerns, a significantly restructured national program is possible if the following items are adequately addressed:

- Change the funding prioritization process from the current use of legal agreements as the primary funding element to a risk management approach.
- Fund the program at a stable level in excess of the FY97 FYDP.
- Resolve the regulatory agency concerns regarding identification of total program requirements to DOD and Congress during the budget process.
- Continue close coordination and partnering with regulators.

Actions which have occurred in response to the assessment include:

- Use of a risk management strategy as the primary funding element for planning, programming and budgeting. Risk management considers a variety of factors including site relative ranking, legal agreements, mission impacts, contracting issues, economic reuse and community concerns to establish funding priorities.
- DON support of a stable funded program.
- Continued close coordination and partnering with the regulators. DON met with the regulators to explain the planning, programming and budgeting process and probable future funding levels. As a result of these meetings, the regulators have a much better understanding of the budgeting process.

4.3 RELATIVE RISK SITE EVALUATION

The DON used the DOD Relative Risk Site Evaluation Model to evaluate sites in the Environmental Restoration Program to determine each site's relative risk. DON used the site's relative risk, in conjunction with other risk management concerns, to plan, program and budget remedial work at DON installations. In general, sites with a greater relative risk will be addressed prior to sites with a lower relative risk; however, as discussed below, other risk management factors may influence the prioritizing of future work.

In the Relative Risk Site Evaluation Model, information regarding contaminants and their toxicity, migration pathways and the existence of human or ecological receptors that may be affected by exposure to contamination, is analyzed to group sites into "high", "medium" and "low" relative risk categories. As part of the risk management process, DON seeks regulatory and community input concerning a site's relative risk and other factors which need to be considered when budgeting for future site cleanups.

Of the 2,718 DERA and BRAC sites which the DON has evaluated with the Model, 1,382 have a "high" relative risk, 621 have a "medium" relative risk and 715 have a "low" relative risk. By the end of FY96, DON plans to obtain the necessary data to determine the relative risk of the remaining unranked sites currently categorized as not evaluated.

4.4 COMPREHENSIVE PROGRAM COST EVALUATION

A vital part of managing the cleanup program is the accurate portrayal of program costs. Not only is it important to know what work needs to be done, it is equally important to be able to identify the costs associated with that effort.

A comprehensive program cost evaluation continued to be undertaken by the Naval Facilities Engineering Command (NAVFAC) during FY95. Sites at Navy and Marine Corps installations have been evaluated resulting in a detailed site work breakdown structure that describes what work is to be performed, the time period necessary for completion of each work task and all associated costs. Costs are aggregated for work to be accomplished in each fiscal year to determine a life cycle cost for the site. These site costs, in turn, are aggregated to develop cleanup costs over the life of the cleanup program.

DON uses these annually calculated cost estimates for planning and programming purposes. DON based its submission of the DERA budget for FY97, in part, on costs derived from the comprehensive program cost evaluation.

4.5 SITE MANAGEMENT PLANS

Since 1990, the DON has been entering into Federal Facility Agreements (FFAs) with the U. S. Environmental Protection Agency (EPA) for DON installations placed on the NPL. Frequently, state environmental regulatory agencies are third parties to an FFA. FFAs are legal documents that describe the responsibilities of each of the parties to the agreement, set forth what work products are required as part of the cleanup process, and established milestones for their accomplishment. To date, DON has signed 27 FFAs, two in FY95,

Over the last two years, the DON has developed a new approach to negotiating FFAs. Through a partnering process with EPA Region III that identified common objectives, the DON was able to streamline the FFA and produce a model agreement that optimizes the required number of primary documents. All deadlines are taken out of the FFA and placed in a separate Site Management Plan (SMP). The SMP is a primary document that describes all operable units and a life cycle schedule for all actions. SMPs contain enforceable deadlines for the current fiscal year (following Congressional appropriation of DERA funds) and are updated annually.

The DON site management plan approach fosters trust between DON and its regulators, simplifies the FFA process, and provides all parties with the flexibility needed to effectively manage environmental cleanup at NPL installations. DON requires that new and renegotiated FFAs include SMPs.

4.6 INCREASED USE OF REMOVALS AND INTERIM REMEDIAL ACTIONS

In FY92, only 14% of DON's share of Defense Environmental Restoration Account (DERA) was spent to clean up sites. By FY95, that had risen to 59%. The DON continues to place emphasis on reducing the amount of studies performed and moving to quicker cleanups. An important tool that allows that to happen is increased use of removals and Interim Remedial Actions (IRAs).

Removals and IRAs are early cleanup actions taken at a site to reduce risk and stabilize contamination. For sites with well defined contamination, IRAs are often conducted early in the study phase and, after coordination with regulators, may constitute the final remedial action. The DON's bias for action encourages increased use of removals and IRAs whenever practical. During FY95, IRAs represented 30% of DON funding spent on cleanups.

4.7 CONTRACTING

DON has adequate contracting agreements in place to accomplish the foreseeable needs for the Environmental Restoration Program. These include 15 Comprehensive Long Term Environmental Action, Navy (CLEAN) contracts (totaling \$2.75 billion in capacity) to investigate and design site cleanups and 10 Remedial Action Contracts (RAC) (with a total capacity of \$2.25 billion) for cleaning up sites.

4.8 TECHNOLOGY DEVELOPMENT AND TRANSFER

In order to promote faster, less expensive site cleanups, DON supports development of innovative technologies. DON also supports efforts to share information concerning these technologies. In FY95, DON supported the following technology development and transfer projects:

- **SCAPS** - The Site Characterization Analysis and Penetrometer System (SCAPS), developed as a tri-service initiative, uses laser induced fluorescence to detect petroleum hydrocarbons through a probe pushed into the ground. SCAPS is intended as a field screening tool. The DON has used the SCAPS to locate migrating plumes of petroleum hydrocarbons. The SCAPS includes a standard 20-ton testing truck with a cone penetrometer, modified to detect subsurface petroleum hydrocarbon contamination in-situ. SCAPS is fully self-contained and includes soil/groundwater sample retrieval capabilities, a grouting system to seal the investigation hole upon probe withdrawal, and a remote decontamination system. SCAPS gathers, processes, and displays real-time geotechnical and contamination data. The user is able to quickly delineate a contamination plume without time consuming iterations typically involved with traditional sampling and laboratory analysis. Use of SCAPS results in the saving of time and money.
- **In-Situ Bioremediation** - As an example of DON's application of this technology, at MCAS Beaufort, intrinsic bioremediation is being employed to naturally attenuate and degrade organic compounds. If the treatment is successful, the installation could save as much as \$2 million in cleanup costs.

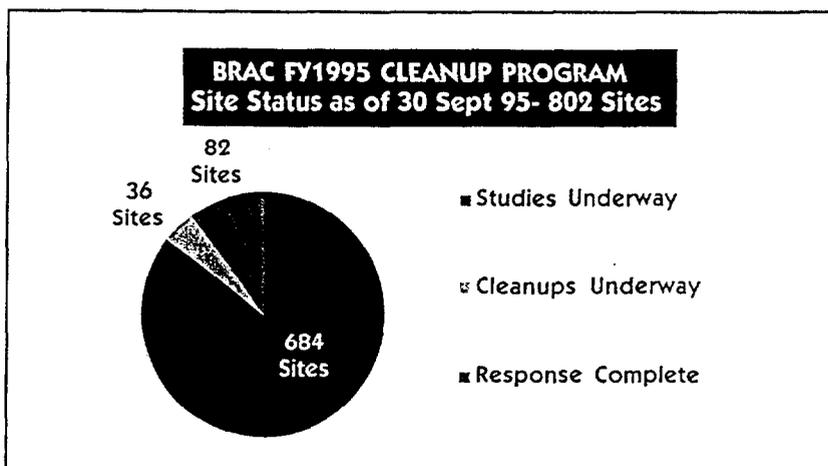
- **National Petroleum Hydrocarbon Test Site** - The Naval Facilities Engineering Service Center (NFESC) operates the Hydrocarbon National Test Site (HNTS) at NCBC Port Hueneme, CA. The HNTS, part of the Tri-Service and EPA Department of Defense National Environmental Technology Demonstration Program, provides a well-characterized site for applied research, demonstration, and evaluation of promising cleanup and monitoring technologies.
- **Technology Application Team** - NFESC formed Technology Application Teams (TATs) to provide the tools necessary for the Naval Facilities Engineering Command Engineering Field Division/Activities (EFD/EFAs) to use new and innovative technologies to reduce site cleanup costs. The TATs identify the need for a remedial technology, identify the barrier(s) for its routine use, identify tools to remove those barriers, and develop those tools. Examples include brochures, technical data sheets, videos, standard statements of work, standard design guidance, specialty contracts, in-house technical consultation and training seminars.
- **Tiger Teams** - A Tiger Team is a peer review team composed of members of the Naval Facilities Engineering Command, industry and academia who visit EFD/EFAs to review cleanup plans and recommend cost efficient remediation technologies. Implementation of Team suggestions have the potential of achieving significant cost and time reductions.

4.9 BASE CLOSURE PROGRESS

The DON made significant progress in the Base Realignment and Closure (BRAC) arena over the past year. Navy and Marine Corps personnel are committed to "Fast-Track" cleanup at closing bases as demonstrated by the following accomplishments:

- Completing environmental baseline surveys at BRAC I-III installations to determine the environmental condition of property and the status of the cleanup program.
- Forging alliances with regulators to develop cleanup cost estimates and schedules.
- Completing Base Closure Plans (BCPs) for BRAC I-III installations.
- Integrating study and design work efforts between CLEAN and RAC contract personnel to accelerate cleanup.

Site status - As of the end of FY95, DON had identified 802 sites on BRAC installations. DON has completed all necessary cleanup response actions at 82 sites and cleanup is underway at an additional 36 sites. The following chart demonstrates the current status:



Environmental Condition of Property - As of the end of FY95, DON identified a total of 35,429 acres available for transfer from BRAC I, II and III installations, of which 4,651 acres have been transferred to other federal agencies and 244 acres have been transferred to communities for economic reuse.

Cleanup strategy - In FY95, the BRAC cleanup strategy was to:

- Support the BRAC Cleanup Team (DON, EPA and state regulatory personnel) cleanup priorities.
- Fund all cleanup projects as soon as they become viable. This resulted in full execution of all available funds by May 1995.
- Finish all necessary cleanup by FY01.

For FY96, DON modified the cleanup strategy, due in part to a decrease in cleanup funding, to:

- Focus funding on cleanup projects where there is specific reuse planned for the property.
- Fund all cleanup projects where an imminent health threat has been discovered at the site.
- Fund projects based on the project's merit versus first come first serve.
- Give priority to funding actual cleanup projects versus site investigation.
- Finish all necessary cleanup by FY06. (This includes cleanup actions to be accomplished for BRAC IV installations)

Regulator involvement - In FY95, DON:

- Established east and west coast working groups (including regulators) to review cleanup criteria.
- Used regulator input to refine the scope and type of cleanup projects which should be accomplished.
- Involved BRAC Cleanup Teams in prioritizing FY96 projects to be accomplished.
- Issued future land use policy - DON Environmental Policy Memorandum 95-02 "Consideration of Future Land Use in Determining Cleanup Standards for Base Realignment and Closure (BRAC) Property" of 17 Aug 95.
- Issued guidance on transfer of property to other federal agencies - NAVFAC letter "Environmental Requirements for Federal Agency to Agency Property Transfer at BRAC Installation" of 13 Oct 95, which forwards DON Environmental Policy Memorandum 95-01 of 26 May 95.
- Issued guidance on approval for reports detailing the suitability of property for transfer or lease - DON Environmental Policy Memorandum 95-03 "Approval Authority for Finding of Suitability to Transfer (FOST), Finding of Suitability to Lease (FOSL) and Environmental Summary Documents for Federal Agency to Agency Property Transfer" of 21 Aug 95.
- Provided support to the Fast-Track Cleanup Implementation Work Group.
- Created BRAC Closure Plan Abstracts which established a baseline and metrics to assess program progress.
- Participated in and supported BRAC Cleanup Team training.
- Conducted an east and west coast OSD/Navy Community Conference to exchange ideas and update communities on cleanup issues.

BRAC Program Highlights - The DON seeks to clean up and transfer BRAC properties as soon as possible. Additional accomplishments and innovations which occurred in the BRAC cleanup program in FY95 included:

- For BRAC I, II, and III installations, 13 reuse plans have been approved, an additional 13 plans have been developed, and are awaiting approval, and seven are planned for future development.
- 34.7 acres at NAVSTA Long Beach, California and 384 acres at NAVSTA Staten Island, New York were transferred for reuse.
- 2,580 acres at NAS Chase Field, Texas were leased to the Bee County Redevelopment Authority.
- Established the Bay Area Defense Conversion Action Team for bases closing in the San Francisco, California area.

4510 RESTORATION ADVISORY BOARDS (RABs)

In the past, the DON worked with Technical Review Committees (TRCs) which served as a conduit to provide technical information on cleanup activities to regulators and the community. An increasing need to actively involve affected members of the community in cleanup decisions led to the establishment of Restoration Advisory Boards at all closing and active installations where there is sufficient, sustained community interest. The purpose of RABs is to gain effective input from stakeholders on cleanup activities and increase installation responsiveness to community environmental concerns.

In February 1994, the Navy issued implementing guidance for all installations in the Defense Environmental Restoration Program which currently had TRCs to convert them to RABs. This conversion will be accomplished by:

- Expanding existing TRCs to include additional community representatives;
- Establishing co-chairs, one from the community members of the RAB and one from the Navy;
- Opening meetings to the public

Marine Corps guidance issued in May 1994 directed installation commanders to expand the function of the current TRCs and establish RABs if one of the following conditions is met:

- A local government requests that a RAB be formed;
- Fifty local residents sign a petition requesting that a RAB be formed;
- The installation is a base closure

DON remains committed to involving communities surrounding its installations in the environmental restoration decision making process, fostering communication and increasing the level of trust between all affected stakeholders. During FY95 significant progress was made to establish new RABs and strengthen existing RABs. To date, 80 RABs have been formed covering 101 DON installations.

RABs are becoming full partners in the cleanup process and provide a range of advice to DON decision makers, including phasing of work and selection of remedial cleanup technologies. RAB advice has resulted in the saving of both time and money. For example, the RAB at NAS Whidbey Island, Washington recently provided recommendations on cleanup alternatives which resulted in the selection of an alternative that saved the Navy \$4.5 million.

DON plans to continue its efforts to build community alliances through RABs that stress both balance and diversity of all views.

INDIAN HEAD NAVAL SURFACE WARFARE CENTER

INDIAN HEAD, MARYLAND

Engineering Field Division/Activity: EFACHES
 Major Claimant: COMNAVSEASYSOM
 Size: 3,423 Acres

Funding to Date: \$5,365,000
 Estimated Funding to Complete: \$57,949,000

Base Mission: Conducts research, development and production of rocket and torpedo propellants and explosives

Contaminants: Heavy metals (mercury, silver), low-level radiation, industrial wastewater, solvents, ordnance compounds, acid, chlorinated and non-chlorinated solvents

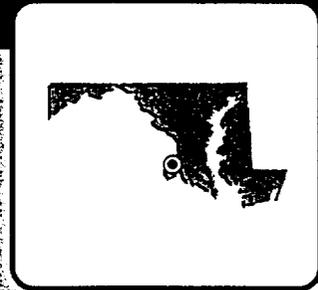
Number of Sites:

CERCLA: 48
 RCRA Corrective Action: 0
 RCRA UST: 0
 Total Sites: 48

Relative Risk Ranking of Sites:

High: 15
 Medium: 10
 Low: 16

Not Evaluated: 3
 Response Complete: 4
 Total Sites: 48



EXECUTIVE SUMMARY

Indian Head Naval Surface Warfare Center (NSWC) is about 35 miles south of Washington, D.C. NSWC lies on a peninsula formed by the Potomac River and its tributary, Mattawoman Creek. The Stump Neck Annex of NSWC lies on a non-contiguous parcel of land across the Mattawoman Creek. The town of Indian Head is in the immediate vicinity of NSWC. The immediate land use around the Stump Neck Annex is primarily rural, residential and public use, including General Smallwood State Park.

The primary mission of NSWC is the research, development and production of propellants for use in rocket motors and torpedoes. Because of the nature of its commodity, NSWC purchases, produces and handles complex chemicals. Wastes from ordnance operations have included waste propellants, explosives, acids, paints, solvents and metals. In addition, waste from non-ordnance operations include oils, pesticides, degreasers, acids, industrial wastewater and the chemical additive PCB. The primary contaminants of concern are lead, silver and mercury. The Navy has changed its operational processes to prevent further contamination.

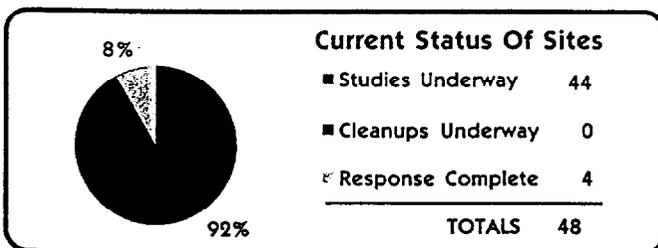
NSWC was listed on the National Priority List (NPL) in FY95, with a Hazard Ranking System (HRS) Score of 50.00. Mercury contamination of surface waters is a concern. The Stump Neck Annex is not included in the NPL.

Due to NSWC's location along the Potomac River and its tributaries, the Mattawoman and Chicamuxen Creeks, contaminants in the shallow groundwater or surface runoff can enter these waterways. The surrounding marshlands provide ecological habitats, and the waters provide spawning and nursery area for several species of fish. These waterways are also used for recreational fishing and eventually empty into the Chesapeake Bay. Surficial groundwater is not used for drinking. Drinking and industrial processing water is derived from wells at a minimum of 200 to 400 feet

deep. Due to the underlying geology, these deep aquifers are protected from contaminants by a number of zones of low permeability materials.

A Technical Review Committee (TRC) was formed in 1993. A Restoration Advisory Board (RAB) was established in January 1995. The community is actively involved in the 14 member RAB and meets quarterly. A Community Relations Plan (CRP) was updated in March 1995. An information repository is established at the Charles County Public Library, La Plata Branch and at the Indian Head NSWC General Library. The administrative record was established in 1994 (inclusive back to 1979) and is maintained at Engineering Field Activity Chesapeake (EFA CHES).

Forty-four sites are in a study phase. Four sites are considered Response Complete (RC) (Sites 40, 41, 51 and 52). Removal actions (removal of contaminated soil) were completed at Sites 5 and 8 in FY95. Interim Remedial Actions (IRAs) are underway at Sites 56 (waste removal - soil contaminated with heavy metals) and 57 (groundwater treatment of chlorinated solvents). The expected completion for these IRAs are FY97 and FY99, respectively. Both actions are expected to decrease the contaminants on-site and migration potential.



INDIAN HEAD NSWC RELEVANT ISSUES

ENVIRONMENTAL RISK



HYDROGEOLOGY - NSWC is composed of two, non-contiguous parcels of land. Indian Head Peninsula is bounded on the west by the Potomac River, east by Mattawoman Creek and north by the town of Indian Head. Stump Neck Annex is on a peninsula bounded by the Mattawoman and Chicamuxen Creeks, both tributaries to the Potomac River. The Potomac and tributaries are probably hydraulic discharge points for unconfined groundwater present in surficial deposits. Thus, contaminants in the shallow groundwater and surface drainage can potentially migrate to the Potomac River, Mattawoman, or Chicamuxen creeks. The Potomac River and its tributaries are an estuary and subject to tidal action. Surficial groundwater is not used. Deeper production aquifers exist between 200 and 400 feet below ground surface. Potential contamination of off-site wells is significantly less due to distance and the cone of depression formed by the on-base wells. These deep aquifers are somewhat protected by impermeable clay zones. Precipitation averages 47 inches per year, with 10 year probable minimum and maximum of 35 and 56 inches of rain per year, respectively. The mean annual precipitation of snow, sleet and hail is 19 inches.



NATURAL RESOURCES - About 50% of the base is considered open field and shrub, 40% forest and 10% wetlands, including a 25-acre tidal swamp and waterfowl sanctuary. The installation has 314 acres of marshland and tidal flats that provide protective ecological habitat. The Potomac River in the vicinity of NSWC is a spawning and nursery area for striped bass, white perch, herring and shad, and is the upstream limit of the nursery area for estuarine-dependent species that spawn in the Atlantic Ocean. The Potomac River and tributaries are used for recreational fishing. Over 80 species of birds, 22 species of mammals, 15 species of reptiles and 14 species of amphibians are common or abundant on the base. The Southern Bald Eagle, an endangered species, is indigenous to the area, but is considered an infrequent visitor to NSWC. The Rainbow Snake found at NSWC is recognized by Maryland as a threatened and endangered species.



RISK - Fifteen of the 48 sites on NSWC are ranked "High" relative risk in the DOD risk ranking system. Eleven of the sites are contaminated with silver, lead, mercury, or other heavy metals. Two of the sites are scrap and dump yards, containing chlorinated solvents, heavy metals and inert material. In general, contaminants at these sites could impact ecological sediment, soil, groundwater, surface water and human workers. Mercury contamination migration from four of the sites is of concern; however, a 1991 study by U.S. Fish and Wildlife of mercury levels in fish from the Mattawoman Creek concluded no abnormal amount of mercury in the fish. Of the remaining sites, ten are ranked "Medium," and 16 are ranked "Low" relative risk. The remaining three have not been evaluated, but will be when sufficient data is available.



RESTORATION PROJECTS - Excavated mercury contaminated soil during FY95 from Site 8 was placed in the soil cover of an explosive berm. Excavated silver contaminated soil from Site 5 was placed in a borrow pit. At both sites the soil was capped with clay and topsoil and revegetated.

OPERATIONAL ISSUES



NATIONAL PRIORITY LIST - NSWC was listed on the National Priorities List (NPL) on 29 September 1995 with a Hazard Ranking System (HRS) Score of 50.00. The Stump Neck Annex is not included on the NPL. Mercury contamination at three sites is of concern. The main concern is mercury contamination found at Site 8, which includes a stream and pond downstream. Any mercury can ultimately be discharged to the Mattawoman Creek, affecting tidal marsh fish and fowl downstream. Waste removal of soils at this site was conducted in FY81 and FY95.



PARTNERING - An Engineering Evaluation/Cost Analysis (EE/CA) was performed on Site 56. The State of Maryland provided technical input. The EPA was not involved and this is viewed as a pro-active approach. No contractor was used during the preparation of the EE/CA.



RESTORATION ADVISORY BOARD - A Technical Review Committee (TRC) was formed in 1993 and met quarterly. The TRC was converted to a Restoration Advisory Board (RAB) in January 1995. The RAB has 14 members and meets quarterly. The community is actively involved in the RAB, accounting for about seven of the board members.



COMMUNITY RELATIONS PLAN - The Community Relations Plan (CRP) was updated March 1995.



INFORMATION REPOSITORY - An information repository is established at the Charles County Public Library, La Plata Branch and at the Indian Head NSWC General Library. The administrative record was established in 1994 (inclusive back to 1979) and is maintained at Engineering Field Activity Chesapeake (EFA CHES). Copies of Administrative Record documents are maintained for public access at the Information Repositories.

INDIAN HEAD NSWC HISTORICAL PROGRESS

Site 8 - Completed Interim Remedial Action (IRA) (waste removal - soil w/ heavy metals).

Sites 1-29 - Completed Preliminary Assessment (PA).

Sites 5, 8 and 12 - Completed Site Inspection (SI).

Sites 39-55 - Completed the PA phase.

Site 42 - Completed the SI phase.

Sites 51 and 52 - Listed as Response Complete (RC).

Site 5 - Completed an IRA (waste removal - soil w/ heavy metals).

Sites 39-41, 43-50 and 53-55 - Completed the SI phase.

Site 56 - An IRA (waste removal - soil w/ heavy metals) is underway. Expected completion in FY97.

Sites 40 and 41 - Listed as RC.

PROGRESS DURING FISCAL YEAR 1995

Sites 5 and 8 - Completed 2nd IRA (waste removal - soil w/ heavy metals).

Site 5 - Remedial Investigation/Feasibility Study (RI/FS) is underway, expected completion in FY02.

Site 8 - RI/FS is underway and expected completion is in FY97.

Site 57 - An IRA groundwater treatment - chlorinated solvent is underway and expected completion is in FY 99.

PLANS FOR FISCAL YEAR 1996

Sites 39, 42, 44, 46, 47, 49 and 53-55 - RI/FS is underway. Expected completion FY99.

Sites 12 and 56 - RI/FS is underway. Expected completion FY00.

Sites 43, 45, 48 and 50 - RI/FS is underway. Expected completion FY02.

INDIAN HEAD NSWC PROGRESS AND PLANS

CERCLA	FY94 and before	FY95	FY96	FY97	FY98	FY99	FY00	FY01 and after
PA	46							
SI	18					1		25
RI/FS				.1		9	2	31
RD							9	32
RA								41
IRA	2(2)	2(2)		1(1)		1(1)		
RC	4			1		1		42
Cumulative Response Complete	8%			10%		12%		100%